

FEBRUARY, 1921

# THE MINING CONGRESS JOURNAL

VOLUME 7

NUMBER 2



## *In This Issue:*

*Lake Superior Shippers Attack  
Iron Ore Freight Rates*

*Prosperous Year for Coal and  
Oil Industries*

*Resume of Western States Metal  
Output*

*House Committee Uses Knife on  
Bureau of Mines Budget*

*Washington News—The Business  
Outlook—Bills in Congress  
and*

*Something About a Senator Who  
Once Went Broke In a  
Mining Venture*

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**H. FOSTER BAIN**

*Appointed Director of Bureau of Mines  
and Serving as Acting Director, Pending  
Senate Action Upon His Nomination*

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FEBRUARY

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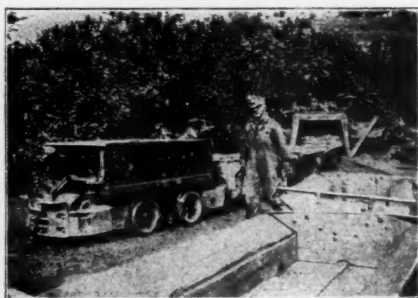
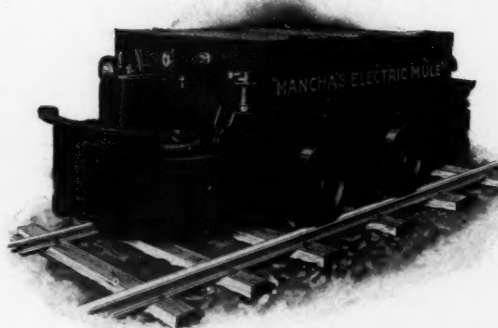
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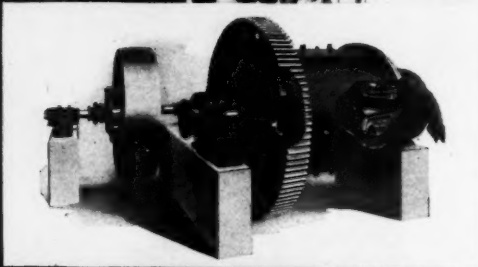
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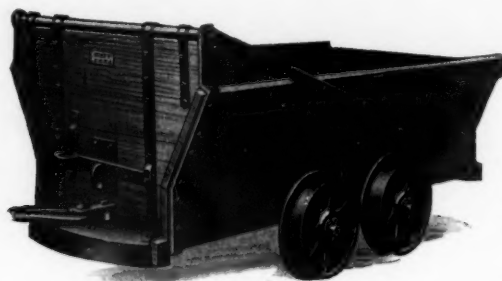
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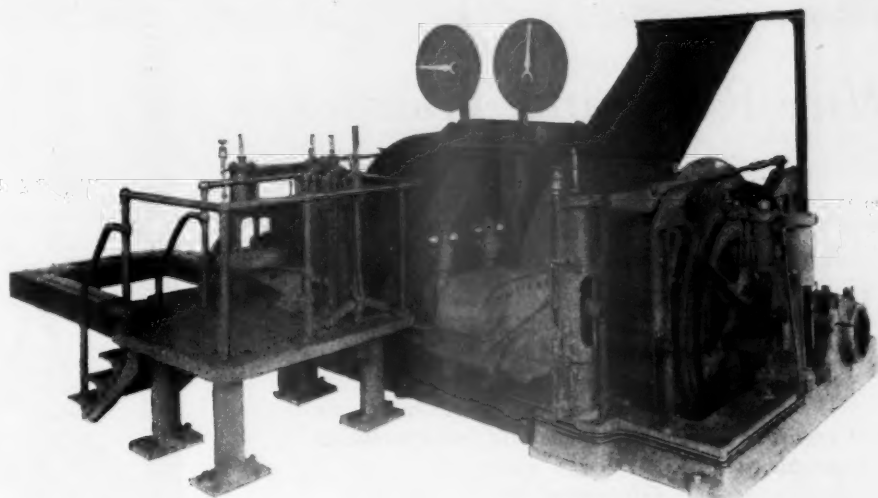
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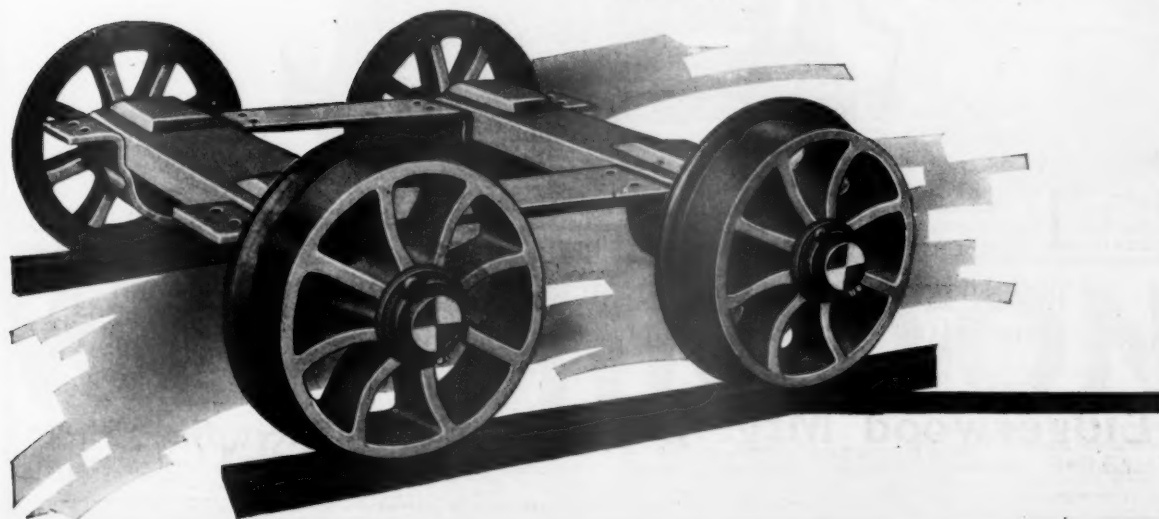
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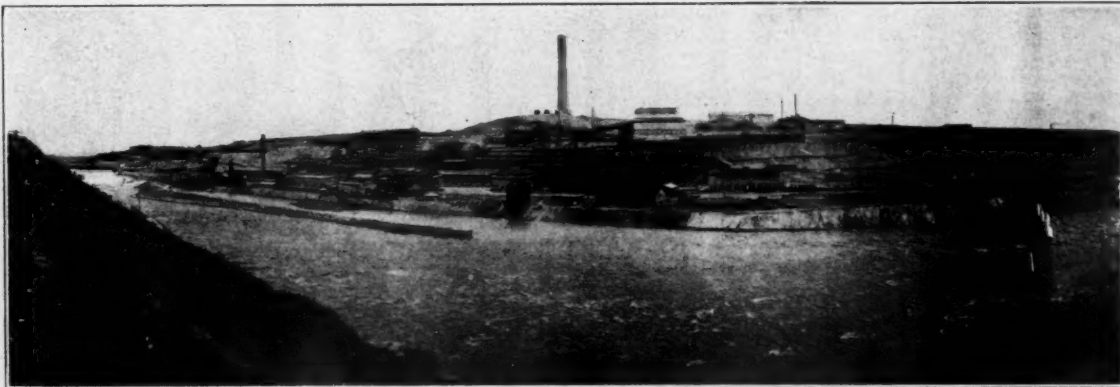
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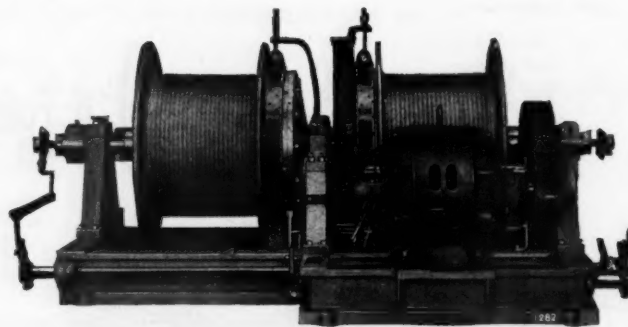
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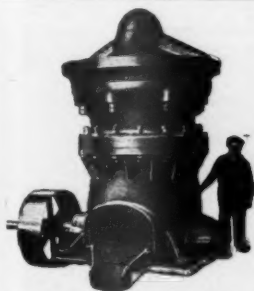


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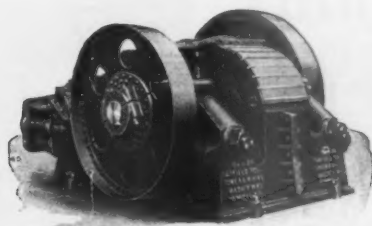
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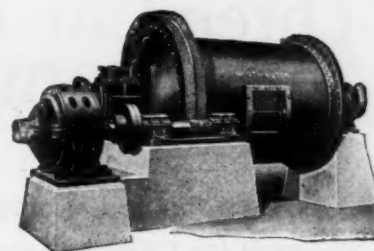




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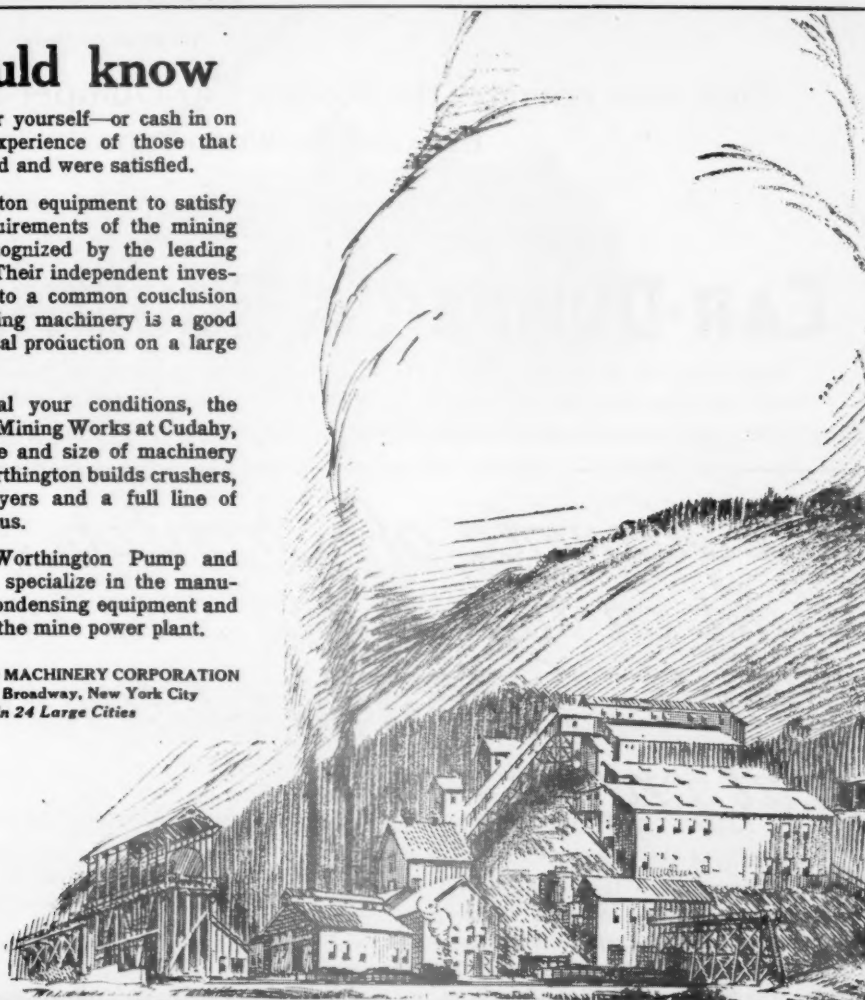
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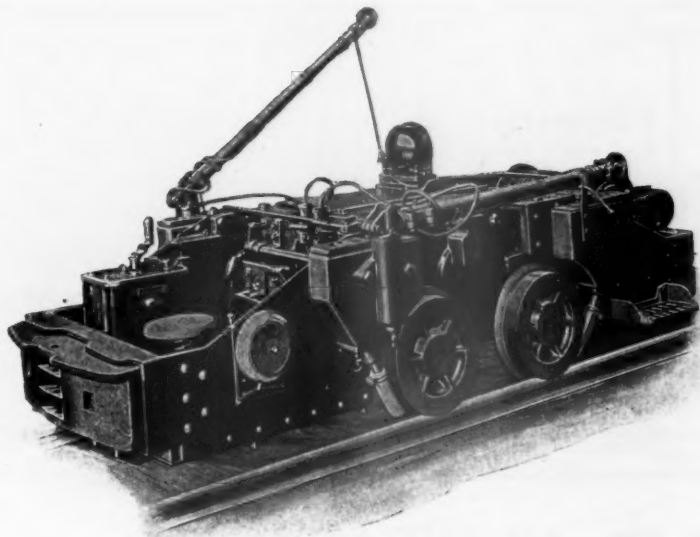
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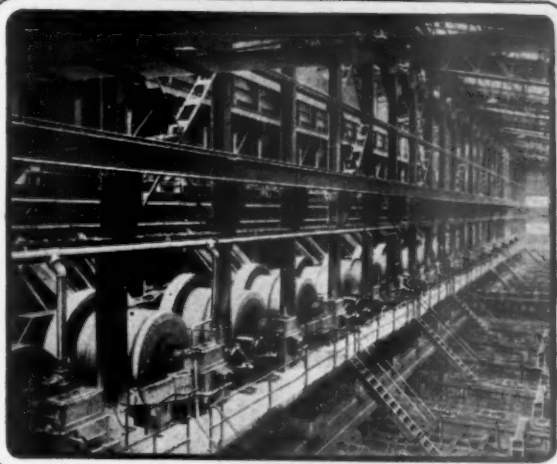
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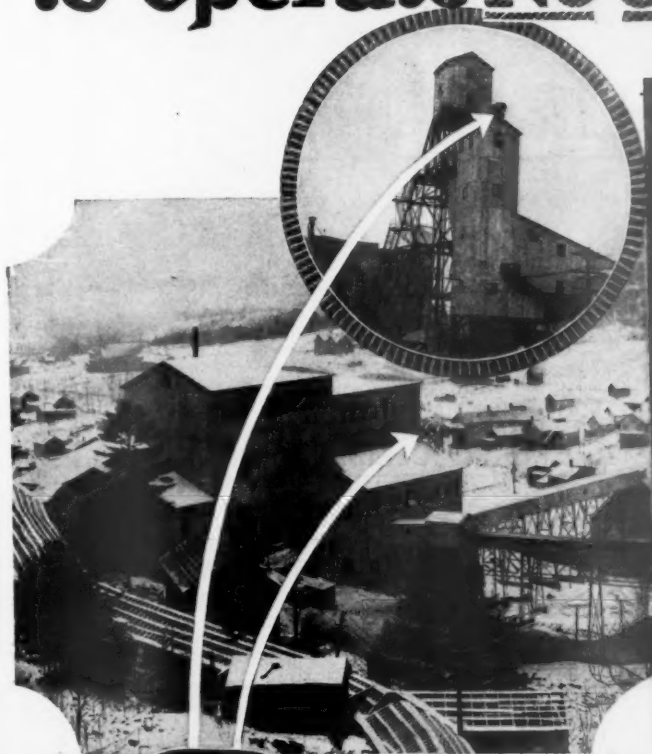
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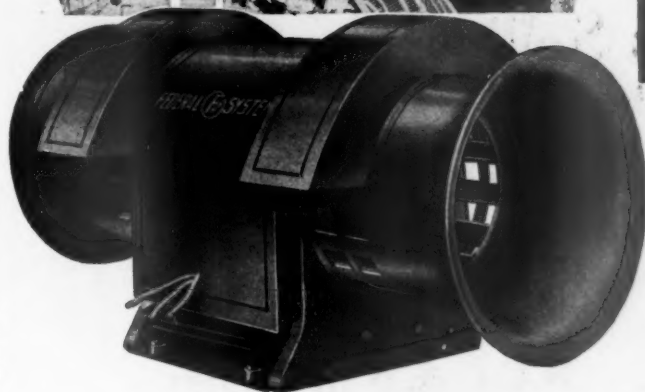
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Coal Products Mfg. Company	Joliet, Ill.	35
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Bethlehem Steel Company	Sparrows Point, Md.	360
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Bethlehem Steel Company	Steelton, Pa.	60
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Toledo Furnace Company	Toledo, O.	94
Youngstown Sheet & Tube Company	Youngstown, O.	306
LaBelle Iron Works	Follansbee, W. Va.	94
United Furnace Company	Canton, O.	47
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Brier Hill Steel Company	Youngstown, O.	84
Gulf States Steel Company	Gadsden, Ala.	37
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Minnesota By-Product Coke Company	St. Paul, Minn.	65
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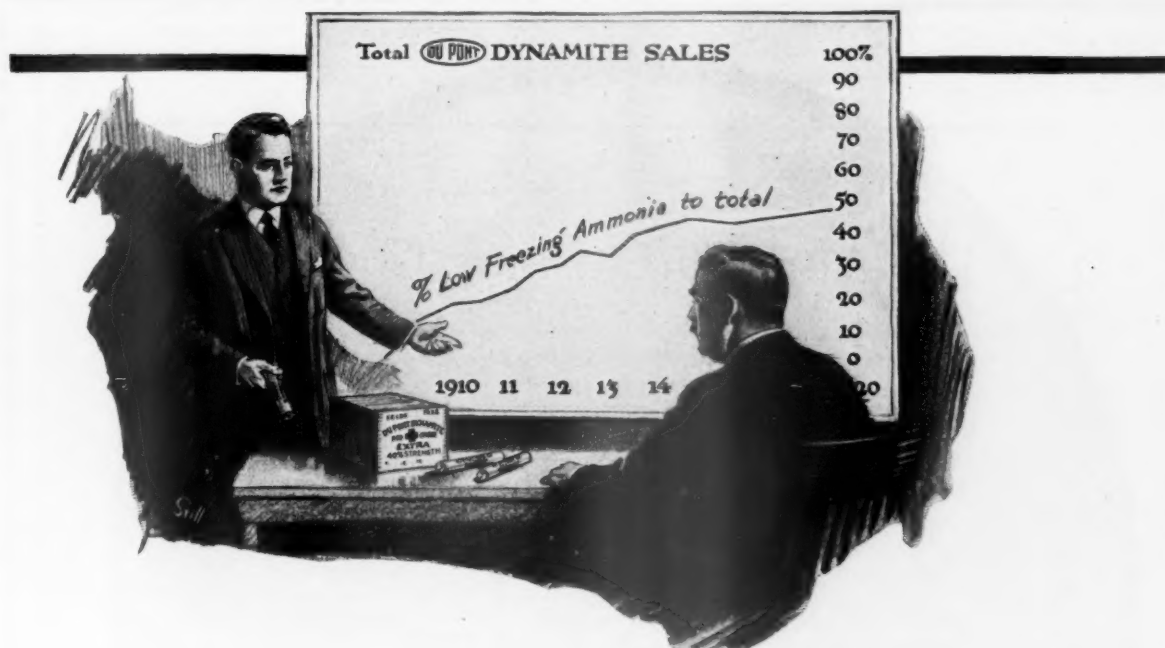
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*Second*—Intelligent conservation with a view to the highest utilization and the prevention of waste of mineral resources.

*Third*—The protection of mining investors against fraud and misrepresentation; the stimulation of investment in real mining and to demonstrate that mining is a business and not a gamble.

*Fourth*—Uniformity in state laws governing mining operations carried on under like conditions.

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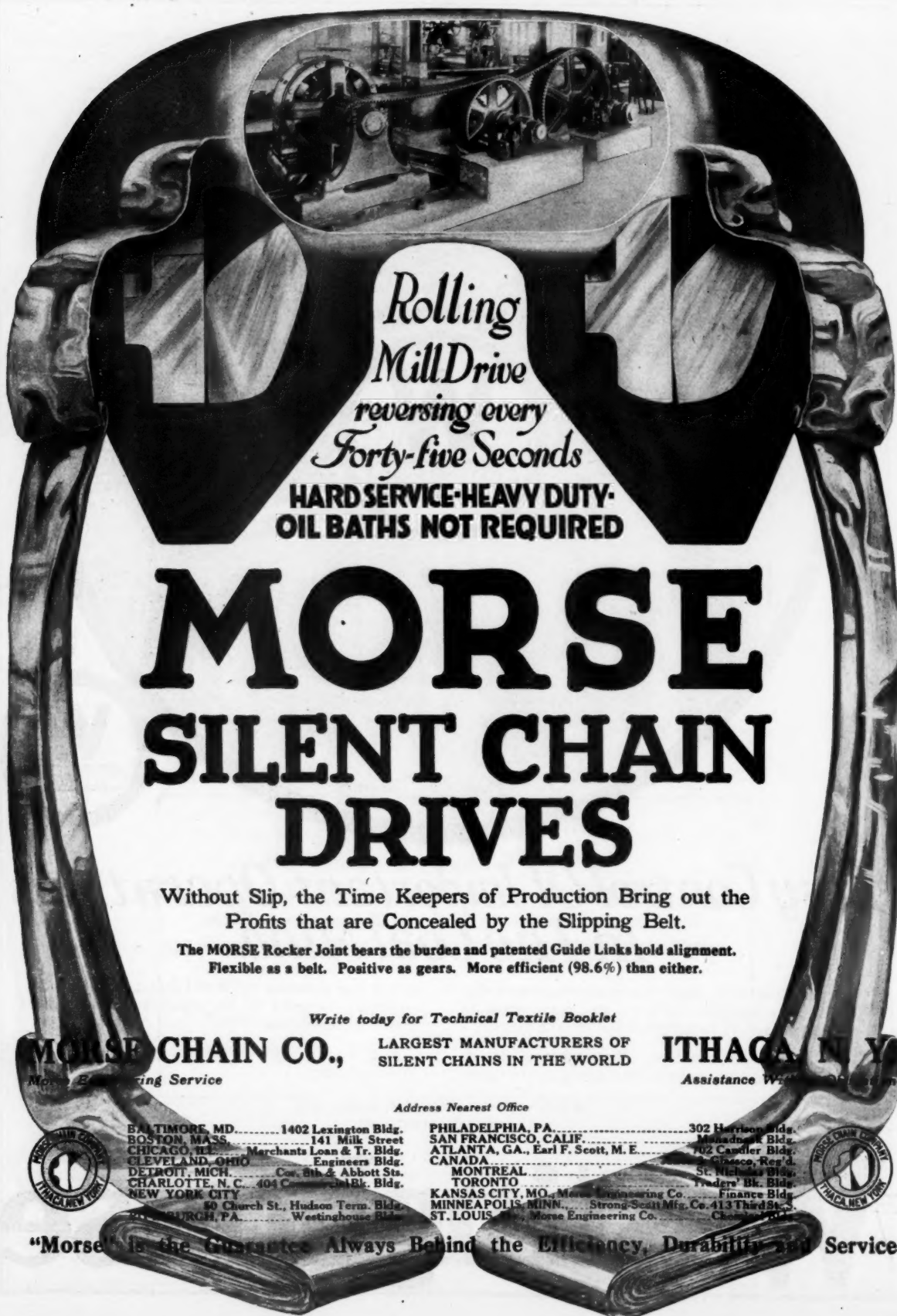
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## ANOTHER COAL INVESTIGATION

**W**E HAVE WITH US TODAY, as we had yesterday and apparently as we will have forever, another coal investigation. So many congressional committees, grand juries, commissions, bureaus, civic societies, religious bodies and state, county, city, ward and district authorities have conducted fuel inquiries that it is no wonder the editor of the *American Coal Journal* recently burst into song and penned the little ditty:

Count that day lost  
Whose slowly sinking sun  
Sees in coal no  
New Inquiry begun.

The most recently promised, or threatened, investigation is to be conducted by the "Industrial Research Division" of the "Church League for Industrial Democracy," which apparently is a half-brother or nephew or something of the "Federal Council of Churches" and a step-kinsman of the "Interchurch World Movement." The leader is to be an eminent New York divine, and he will have associated with him two theological professors, the vice-president of a New York daily newspaper, the president of a state federation of labor, a lady college president, a member of the National Young Women's Christian Association, the president of the Amalgamated Clothing Workers of America, two magazine writers, one dean, three rectors and the editor of the largest socialist daily in the country.

The investigators will not be content with half-way measures. They intend to learn all about it while they are at it. Their official announcement proclaims that they will not only work along the general lines followed by the "Interchurch World Movement" in its steel investigation, but that they will give special attention to contracts between employers and employees, with particular consideration for the "spirit" of cooperation between the two; that they will also investigate housing and rental conditions, especially in industrial settlements and localities, and that they will conduct an intensive study into wages paid, working conditions of the mines, and the social environment of the mining communities.

This is quite a program. If there is anything in the public, private, home, business or religious life of the mining community which is not to be surveyed, analyzed, dissected, passed upon and pasteurized it is difficult to name it off-hand—except, of course, the little matter of increased production of anthracite and bituminous, which is too trivial to talk about, even to think about.

The ability of the investigators is self-evident. The list of names is impressive and representative. What it lacks in some respects it more than makes up in others.

It does not include any mining operators, engineers or geologists, but their assistance is not at all necessary. The list does not contain the name of any one who earns a living by the sweat of his brow, but it does embrace several who derive their incomes from swinging their tongues. There are none who know how to handle a pick, but several who can shove a pen mightily. None is included among the "best minds" with whom President-elect Harding counselled at Marion, but several of them could go to the Atlanta penitentiary and gain an immediate audience with Eugene Debs. It is not necessary to give their names; a catalogue of their avocations and entitlements is sufficient to show that they constitute a select assemblage, a company of colossal intellects, a galaxy of greatness and goodness. Their labors will undoubtedly round out and bring to perfect completion the unfinished but highly valuable and resultful endeavors of all the other notable investigating bodies who have gone before them. Further comment would be presumptuous.

But there is one thought which suggests itself and insists upon being expressed. It is this: If all the investigators engaged in digging into the facts respecting the coal situation will just forget about the facts and go to digging coal, there will be no more fuel famines as long as the world stands.

## THE GOVERNMENT AND COAL

**I**T IS SOMEWHAT DISTURBING to find the press of the country so ready to justify government interference in business matters, which public at the same time applauds the platform announced by President-elect Harding in favor of less government in business and more business in government. The *Washington Post* in a recent editorial states:

"Congress can do no better service for the people than to relieve them of the exactions of speculators and profiteers in coal. It is a difficult task, but it can be performed if the will is there to perform it. One of the first points to be ascertained is the proper price to be allowed, which must be based upon the cost of production. Producers have stood in their own light by confusing the public as to the actual cost of production, and in some cases producers have no clear idea of their own regarding costs. The government can ascertain the cost by taking over the ownership and operation of typical mines, if in no other way. This is a condition which calls for prompt remedy, and there should be no hesitation in applying the strong hand of the government, not for universal government ownership and operation, but solely for the purpose of getting at actual costs.

"There are certain grades of coal which the government must have. The navy needs a high-grade coal which ought to be owned in the ground by the government; and perhaps the same rule should be applied by the shipping board for the sake of maintaining the merchant marine. Why should speculators be permitted to manipulate the price of coal used by the navy and the merchant fleet? The government should take over the coal fields which yield this particular grade of fuel. If the owners will not sell at a fair price, let the power of eminent domain be exerted for the benefit of the whole people.

The *Washington Post* evidently does not know that the greatest known supply of Navy grade coal is now owned by the United States Government and it is probably true that the *Washington Post* may not be aware that before the war governmental interference with the usual methods of development of western resources absolutely prevented the development of the Behring coal fields in Alaska, and that, during the war when the transportation needs of the country were so taxed as to make necessary embargoes upon the transportation of all but war supplies, trainload after trainload of coal was shipped from West Virginia to Pacific Coast ports to supply the Pacific Navy.

The tendency toward the centralization of power in the Federal Government is most dangerous to the future maintenance of republican government.

The coal operators of the country are and have at all times been ready to produce coal at a price cheaper proportionately than any other article upon the market. The business of transportation, necessarily a monopoly, should be supervised and regulated by the central government but it is right at this point where the industry of coal supply broke down in that the railroads were not able to transport coal from the mine to the consumer, partly because governmental interference in Alaska had made necessary the use of those transportation facilities to haul coal from Virginia to the Pacific Coast, and partly because over-regulation had prevented development of railroad facilities commensurate with the growth in other lines.

No business with a capacity in excess of the possible demand needs other regulation than the law of competition. Legislators have much to learn, who believe they can improve upon the law of supply and demand as a controlling factor in industrial life.

The average price of coal to the consumer in the United States is proportionately less than the price of nearly all food supplies. Why single out the coal industry?

### UNEMPLOYMENT AND HIGH PRICES

THE PROBLEMS OF THE UNEMPLOYED are sufficiently difficult when the prices of food products are at normal levels, but when, as now, living costs are abnormally high, these problems become a catastrophe. The truism, that a man cannot lift himself over the fence by pulling on his boot straps, is in part denied by the fact that the boot straps of unemployment drag men farther away from an adequate wage level. The more of unemployment, the less of production, the higher the prices. Not only are the unemployed unable to help themselves but the friends who usually might help find their wages fully absorbed by the high cost of living and are therefore unable to help. The writer's long-time friend, the western story writer, Chauncy Thomas of Denver, one day before experience had brought to him its lesson of thrift, bitterly announced, "Governor, I'm in hard lines." "Broke again Chauncy?" "Yes, but that's usual and I don't mind it; but the serious thing is, all my friends are broke."

The problem of the improvident is really serious when all his friends are broke, the condition at the same time being intensified by a high price market. The obvious remedy is that no man should ever live up his full income. Every man should save enough from his income to provide against the proverbial rainy day. But the truth is the majority of workmen do not save and consequently the present high level of prices comes to the unemployed with crushing force. Undoubtedly these conditions will teach many a useful lesson, but we well might hope that this

lesson could be learned by some other method than that of the bitter experience which this process entails.

### WHY OPTIMISM?

THE UNITED STATES is blessed with untold natural resources and complete machinery to make these resources available for use. At the close of the war surplus stocks of both raw materials and manufactured products were generally available. These stocks are largely exhausted; the world's storehouses are vacant, public improvements have been neglected for years, and outside of the United States no railroad system is in even fairly good order. To meet the demands for home consumption would require a normal activity of all of the nation's industrial forces. To create that surplus which will be demanded by foreign countries, the producing forces of the United States will be over-taxed for many years to come. With prices properly adjusted, the future gives greater promise of commercial activity than has ever before prevailed. War time activities were excessive in some lines and abnormally low in others. The future promises unusual opportunity for every productive force in the nation and whenever the price levels shall have become normal, business cannot long remain stagnant. It is believed by the best trained economists that the bottom has been reached in many lines and is near in all lines. Every reason points to unheard of business prosperity.

### THE OPEN SHOP

A MEETING of 109 national and international unions has been called for February 23 in Washington, "For the purpose of considering the attacks now being made on the trade union movement." These attacks, it is stated, include attempts to establish the anti-union shop, wage deductions, anti-strike laws, compulsory arbitration, labor injunctions and publicity that would mould the public mind to accept these backward steps. "Our opponents are mistaken," it is announced, "if they imagine they have made the slightest progress in alarming workers or that they will humbly accept a policy of reaction."

The policy of reaction referred to consists of those principles which will insure to every individual absolute freedom of action, subject only to those restrictions which are necessary to prevent interference with the rights of others. It is true that a general movement is in progress looking to the establishment of the Open Shop, the shop in which every man is entitled to work whether he is or is not a labor union member. If trade unionism cannot exist except it be allowed to dictate those conditions under which non-members of the union may exist, then trade unionism in the end will be obliged to surrender. It will not do to begot the issue by saying that this fight is for a closed shop against the unions. The great majority of employers have no objection to their employees belonging to unions, nor any serious objection to collective bargaining. They do object to conditions under which they are unable to select their own employees, to discharge them when they are inefficient or insubordinate, and they do object to collective extortion under the euphonious title of collective bargaining.

The industries of the nation cannot maintain their supremacy except under conditions where operations are properly financed and properly directed. Brains and capital are just as essential to production as labor. The

best results from the efforts of labor can only be obtained under the direction of a guiding hand which coordinates all effort to the common end. Perfect cooperation of brains, brawn and capital are essential to that cheap production which has brought to all classes today the luxuries which were not available to even the few in the olden times. The principles of the Open Shop are necessary to the independence of the American workman. If the labor union cannot furnish labor in open competition with non-union labor, there is something wrong with labor unionism.

### THE COAL INDUSTRY

**T**HE DEVELOPMENT OF A GREAT COUNTRY does not depend entirely upon any one factor. Natural resources, labor, business management and capital are the essentials upon which the prosperity of a nation like the United States is based. The great industrial growth of the United States can, however, be said to more largely depend upon cheap power than upon any other single factor. For many years the coal industry furnished the nation's manufacturing and transportation industries with the cheapest fuel available anywhere in the world. For many years this fuel was sold at too low a price. The average price of bituminous coal at the mine, for five years prior to the war, was \$1.12 per ton. A rather careful investigation at that time convinced the writer that during that five-year period the coal industry, as a whole, had sustained an operating loss of from 10 to 25 cents per ton, on its total production an average loss of more than \$50,000,000 annually during that five-year period. During those years many and various were the appeals made to the government for such aid as would make possible the operation of the coal industry upon a profitable basis.

The coal industry then believed that if it could be given the right under governmental supervision to form trade combinations by which the waste could be avoided, that the business might be made profitable without an increase in price to the consumer. Early in 1913 a meeting of the coal users of Indiana and Illinois was held in Chicago at which it was said that 85 per cent of the total production of those states was personally and actively represented. At that meeting the then conditions were fully outlined and an effort made to devise some plan by which the waste in the industry might be avoided. It is perhaps fair to say that the interest of the operators was based largely upon the fact that this waste prevented the making of profit rather than because of the wasting of the natural resources. Competitive conditions were such as to force the operator to look in this direction for a possible profit. After a two-day discussion, the writer was asked to devise, if possible, some plan to meet the situation. As a result of this, a bill was drawn providing for the creation of what was then to be called an Interstate Trade Commission, which was to be given the authority to pass upon business combinations designed for the public benefit, and to authorize business to be carried on in accordance with plans approved by the Commission. It was not proposed to repeal the Sherman Law but that prosecution under it would lead only to a mandatory order forbidding a continuance of the acts complained against. This plan did not meet the approval of the coal industry as a whole, although it did meet the approval of the leading operators of Indiana and Illinois. Others objected upon the ground that it meant additional interference of government in business. Coal operators were then liable to criminal prosecution, subject to fine and imprisonment, under the Sherman Law for acts which would have been a substantial advantage to the operators, to the country and to the

consumer. In April 1915 a committee of Indiana coal operators consisting of W. S. Bogle, John T. Connery, J. C. Kolsem, Hugh Shirkie, Morton L. Gould and Carl Scholz came to Washington with the intention of interviewing first the Federal Trade Commission and then the Department of Justice. The situation in the coal industry was carefully outlined to the Federal Trade Commission which advised that it had no power to render any assistance in the premises and suggested that the matter should be taken up with the Department of Justice. The Department of Justice expressed great sympathy with the situation but that Department was unable to give any guiding advice. President Wilson then being out of town, the matter was presented to him by letter and he replied as follows: "You may be sure that I will consult with my associates here, and that, if there is any possible way in which we can help in the situation which you unfold, we shall be glad to do so." This was but one among a number of appeals which were made to the authorities for some method by which the industry might be relieved of the bad effects of the cut-throat competition existing between more than five thousand individual operators with a capacity of producing 50 per cent more coal than the market could possibly consume. The situation was made more difficult by the fact that these operations required continuous working at the highest productive capacity in order that the overhead charge might be kept at the lowest point possible in order to meet the cut-throat competition of other producers, each in turn equally anxious to keep down the overhead expense. But no aid, no promise of aid, no indication of possible aid was offered. When the war broke out the government required that these operators should unanimously agree in a way which would have subjected them all to penitentiary sentences before the war. An appeal for government supervision was refused before the war, immediately after all operations had to be uniform under government direction.

When the war was over the coal industry was completely disorganized, but still in position to furnish more coal than the country could consume. Transportation facilities were so disorganized as to interfere with the distribution of coal; speculators took advantage of the situation; war orders and governmental interference left some sections without a proper supply of coal and the nation's wrath turned itself against the coal operators, who have for twenty years furnished coal cheaper than it has been provided to the consumers in any other nation in the world. Coal operators are to be punished for having furnished coal so cheap as to build up in this country its enormous industrial prosperity. Without cheap power, without cheap coal for transportation this magnificent progress could not have been made.

The coal industry today is maligned, slandered and blamed for conditions for which the greater part of the coal operators are in no wise responsible.

### LABOR SHOULD GO TO WORK

**T**HE MOST DISTURBING indication in the industrial field is the unusually large number of unemployed. This unemployment is based upon the fact that the markets of the future will not absorb goods produced at war time costs. With living costs twenty per cent below war prices and continually falling, there is every reason to expect labor to accept a similar reduction because without that reduction low priced goods are impossible. The *Monticello N. Y. Watchman*, in a recent editorial, comments as follows:

"Raw materials are coming down in price and labor prices must follow. The public insist on lower prices for the necessities of life



and will not buy unless the reduction is made. Manufacturers have got to sell the goods for less or not sell them at all and they cannot sell them at lower prices if they have to pay the present high prices of labor. Labor, therefore, must quit striking and go to work. Half of labor for the last two years has been on a strike, upsetting business, decreasing products, increasing prices, and pauperizing itself. Had there been no strikes labor today would have been rich instead of hunting for soup houses and bread lines."

The above is sound advice and should apply as well to capital as to labor. With unbounded natural resources, with the expanding needs of the nation, with foreign markets, to which goods may be shipped as soon as the financial situation has been bettered, there is every promise of the highest remuneration which large consumption will justify.

### THE SALES TAX

**T**HE PROPAGANDISTS of the sales tax, and there are many, freely admit that their intense activities during the last year are but the groundwork for a campaign forecasted to captivate sentiment throughout the country and force the hand of Congress. Therefore, in advance of this Alexandrian campaign, it may be presumed that there are many who have not yet grasped the "principles" and exact nature of this species of taxation.

We have perhaps the requisite patience, but scarcely the time or space, to attempt a complete exposition of the sales tax. In the first place, "sales tax" is a generic term which has been liberally applied to all of the myriad forms of excises, but particularly to the many new proposals primarily designed to eliminate or reduce the present taxes upon luxuries and non-essentials. We have sales taxes at the present time, of course—taxes upon sales of tobacco, jewelry, sporting goods, candy, costly apparel, etc., etc. But, it is claimed, such taxes are no longer wanted; rather, they should be extinguished and the compensatory revenue be derived from a "general sales tax" at a single fixed rate, spread "thinly" over all sales, including, although not conspicuously mentioned, the necessities of life.

"Everything should be treated alike." Some of the devotees of this form of tax "simplification" rest here content, but many more think such a fine idea should be carried to the ultimate of its almost endless possibilities. It being contended that the rich man and the wealthy corporate octopus are not paying taxes, but rather shifting them to the poor ultimate consumer, why not levy a "general sales tax" upon everybody as well as everything, forget the inequities, inequities and complexities of the income tax, and all be happy? "Everybody should be treated alike." (Except, of course, college professors, economists and that ilk, who should be set to figuring excess profits taxes for the rest of their abnormal lives as punishment for the sins committed in defending taxation according to ability to pay.) Extremists being somewhat in disrepute at the present time, there are few who go so far as this, however. On the vast middle-ground rests a multitude of schemes, some of which have been worthy of, and have had, careful and hopeful consideration. There are advocates who would limit sales taxes to merchandise, and some would exempt, as has Canada, the essentials of life. Others would confine the tax to the final sale to the consumer, despite the difficulties of defining the latter in each instance. Others would do this, or that, or these, or those, and others would not. But over it all the battle-cries ring out: "'Tis a simple thing."

Simplicity is presented by proponents as the chief virtue of the sales tax, and we can understand the reaction from the delirium of the present excess profits tax. It is much more difficult, however, to comprehend the mental twists of the self-acknowledged leaders of the sales tax propa-

ganda when they declare publicly that "There is no science of taxation" and that "Billions can be raised by the sales tax but nobody will know it or feel it." If there is anybody in the United States who truly believes that billions of dollars of revenue can be raised by a sales tax without bothering anyone, we advise him most sincerely to join the movement; also, to help put in the penitentiary those responsible for the revenue laws of the last decade.

The blind obsession which seems to possess many of the violent proponents of the sales tax is likely to react to their disadvantage. The urge toward simplicity in taxation is a movement of large proportions, but the unmuffled tirades of some New York interests recently will be found in time but a little toot whistle on a big steam roller. Revenue legislation moves cautiously. Proposals such as those of Otto H. Kahn, who suggests an experimental sales tax upon commodities of one-third of one per cent, in addition to some existing excises, are entitled to the respect of all men, however we may differ in principle. But blatant demands upon Congress for a taxation revolution involving billions of dollars annually, with anathema upon the heads of all who dare oppose, are worth what they appear to be worth.

Failing the sales tax, what is the answer? For the excess profits tax is to go, the income tax must be adjusted, and the huge hole in the governmental revenues must be plugged. In the words of former Solicitor of Internal Revenue Ballantine, is not the case like that of a very sick patient seeking the way to health? He yearns for a healing touch, a sovereign cure. He has little enthusiasm for the counsel of the experienced physician who tells him there is no royal road; that he must carefully do this, that and the other; must not complicate his troubles by trying undemonstrated or discredited methods; that he may be helped here and there by one medicine or another, but must gradually fight his way back to health. Of such a nature is the program recommended by the Committee of the National Industrial Tax Conference.

### SENATOR THOMAS AND REPRESENTATIVE GOVERNMENT

**T**HE FOUNDERS OF OUR GOVERNMENT undertook to create a representative government.

The plan contemplated a close sympathy between the House of Representatives and the people through biennial election so that members of Congress should at all times feel their direct responsibility to their several districts. This responsibility to public sentiment was stabilized by a Senate, the members of which were to be one step removed from the people's choice by being elected for a term of six years by the several state legislatures. Senators were expected to be responsible to their constituents, but to be elected for a term sufficiently long to enable them to voice the sober second judgment of the public which was to be the stabilizing influence over the members of the lower house, whose possible retirement from Congress was never to exceed two years ahead.

The President, with a deciding vote upon all matters of legislation, with the veto power except when overridden by a two-thirds majority of both House and Senate, represented as nearly as might be the entire nation.

These public agencies were designed to be thoroughly representative of every phase of public thought, the majority being in position to finally pass upon the rules under which a popular government was to function.

Senator Thomas of Colorado, in connection with his keen and well-founded criticism of certain public expenditures also criticises the fact that our government is bureaucratic and decries with keen satire the fact that members of the Senate and the House are responsive to the wishes of



their constituents. It is perhaps wise that these matters should receive thorough discussion and open criticism. To the extent that the American people approve the course of Congress will its members be returned to that body; to the extent that these representatives fail to represent, will others take their places in future elections. That the principles of representative government shall be maintained is vastly more important than the practice of economy, even granting this to be of much importance.

Senator Thomas, referring to local sentiment in the home district, says:

"It counts, of course; it counts so much that we legislate here not according to our convictions but according to the demands of our constituents; in other words, we are no longer Senators; we are delegates; we are rubber stamps. We used to keep one ear to the ground, but now we keep both, and as soon as we think we know what the prevailing sentiment is at home we make up our minds."

In what other way can the principles of this government, as defined by Lincoln, be made effective: "A government of the people, by the people and for the people." Senator Thomas, as a lawyer well knows that his professional employment has usually been for a specific case or for a period of time determined by the whim of his client. Clients do not usually employ attorneys for a term of years, giving them *carte blanche* authority to handle all of their affairs without direction or further advice from the principal. An attorney represents his client during mutual agreement and the relation may be terminated by either party at any time. The candidate for a seat in the Senate or for a district in Congress is elected for a specified term during which he has unlimited authority to speak for his district whether his acts meet their approval or not. Senator Thomas is one of the few Senators to whom his caustic criticism does not apply. He is one of the few Senators ready to carry out his own ideas without regard to the wishes of his constituents at home. His retirement from public office on the fourth of March takes from the United States Senate one of its most brilliant minds and a most useful public servant and yet his theory of senatorial responsibility to the wishes of his constituents is one of the factors which has brought about his retirement. In connection with much legislation and particularly with reference to the provisions of the Revenue Law of 1918, Senator Thomas has earned the commendation of the mining industry. His record is clean, effective and brilliant. This must be said, even though we may disagree with his theory of the relation which a Senator bears to that constituency which he represents.

#### FUTURE PRICE LEVELS

**P**REDICTIONS as to the plan of price levels of the future is somewhat hazardous. There are, however, some fundamental principles which command consideration. If the world stood still, if industrial operations and financial methods remained unchanged, the task would be more simple; but, new inventions may greatly change production costs and the movement of money may be greatly accelerated. The supply of gold is comparatively fixed. The service of gold is enhanced by a more rapidly moving currency and an increased mobility of the world's gold supply. If proper allowance can be made for these varying factors, prediction as to future price levels can be made with reasonable accuracy. A careful analysis justifies the belief that price levels of the future will range from 25 to 40 per cent. above the 1914 level. This estimate cannot be applied to any one commodity but to the average price of commodities. It is probable that the wage scale will range somewhat above this point but it cannot remain on the average of the three years past and permit commodity

prices to fall to the predicted level. To the extent that the average wage level, as compared with 1914, is above the index price of commodities, to that extent must capital and management be content with a smaller return. Wage levels seemingly cannot be more than 50 per cent. above the 1914 level. In other words, a 10 per cent differential probably fully measures the excess profits which capital has received and more than that reduction would probably prevent capital from hazardous investment. This would create a condition in which the reduction of wage levels would be forced to a point where enough profit would remain to induce investment; otherwise, labor would be without employment. It seems to be a fair prediction that commodity prices will range about from 30 to 40 per cent above pre-war levels and that wage levels will probably be from 40 to 50 per cent. above pre-war levels in the final adjustment of industrial conditions.

#### THE NORFOLK IDEA

**T**HE CRESCENT IRON WORKS, at Norfolk, Va., in the summer of 1920 found itself unable to continue operations with the high wage levels then prevailing. The Machinists' Union bought up the mortgage and assumed control of the plant. Instead of a long industrial struggle between employers and employees, thrifty employees purchased the plant, assumed its operation and it is now said to be running successfully.

This is a splendid remedy for labor troubles. Let labor put itself upon the employer's side by accumulating its savings and applying them to industrial operation. Those who favor the Norfolk idea insist that it offers a legitimate method of obtaining relief. The successful application of this idea to larger operations may be questioned but there would seem to be no reason, where sufficient savings have been accumulated to operate upon a large scale, why the plan might not be applied to the largest possible operations. The one question is whether a coming together of small investors will develop a leader with the brains essential for the economical direction of a large business enterprise and whether an organization so constituted will submit to that discipline which is necessary to efficient operation. With proper management, there is no reason why this plan may not be applied to the largest industrial enterprises.

#### THE BUSINESS OUTLOOK

**M**ANY AND VARIED are the views expressed concerning the future of American business. Some few feel hopeless as to the future, basing their pessimism upon the accepted belief that prices must necessarily be reduced and that the necessary reduction in wages will be so contested by organized labor as to throw the country into a series of industrial disturbances which will absolutely prevent progress and a return to normal conditions.

A great majority, however, are optimistic concerning the future, the better and prevailing sentiment being that the future is filled with promise. The war left an oversupply in many lines, produced at war prices. The owners of these stocks had to sell these goods at high prices or sustain material loss thereon. Every effort has been made to maintain prices until the high priced goods were disposed of. Production was largely curtailed in the face of falling markets. In many instances the loss has been or is being taken and prices are gradually being brought down to a point which may be regarded as more nearly the level which will exist when normal conditions are again reached. In the meantime stocks are being

exhausted and production must shortly again be undertaken on a large scale in order to keep up with the current demand.

The buyers' strike which has been quite generally in operation is being broken by reduced prices. Operations are being begun at reduced costs and it is confidently believed that within the next three months a radical change for the better will take place. The incoming national administration will assure business stability so far as this can be guaranteed by governmental influence. The devastated European countries are gradually improving their financial conditions and there is every reason to anticipate that the last three months of the year 1921 will witness a prosperity which this country has never before known except in war times.

The issue is clearly drawn. The Supreme Court has disapproved secondary boycotts and Samuel Gompers has disapproved its decision. Union labor now has a well-defined opportunity to show which authority it regards as the highest in the land.

Several score government bureaus have been, and some still are, consuming time, money and white paper in investigating the reasons for the high cost of living. Possibly this is one of the reasons.

In disapproving elaborate and costly inauguration festivities, President-elect Harding showed that economy, as well as charity, may sometimes begin at home.

#### War Finance Corporation Revived

FOLLOWING THE PASSAGE over President Wilson's veto of the resolution reviving the War Finance Corporation, the directors unanimously passed a resolution rescinding its action of May 10, 1920, putting the organization out of business. The managing director has issued an announcement that the corporation is now prepared to consider applications for advances that meet the terms of the law in the same manner that it considered advances prior to the suspension of its activities in May. In submitting applications for loans, applicants should set forth in detail all facts relating to their financial condition, the purposes of the proposed advances and full information to enable the corporation to determine whether the applicants are eligible under the law and can meet its terms and conditions. Insofar as is necessary the corporation will give personal hearings to prospective borrowers. Those desiring information may communicate with the managing director of the corporation, Treasury Department, Washington, D. C.

#### Cost of the Fuel Administration

The cost of the Fuel Administration from September 1917 to June 30, 1919, was \$4,824,681, and on June 30, last there was a balance on hand of \$989,137 from the \$5,813,818 appropriated, according to a final report by Lawrence Mitchell, assistant business manager of the administration. Washington headquarters expended \$2,706,479 and state fuel administrators \$1,948,618. By states the largest sum was spent in New York, \$212,012, of which \$51,675 was in New York city; Pennsylvania was second with \$84,025, and Illinois third with \$66,849. The cost of administering the law in New England was \$99,812. There were fifty-two "dollar a year" men in the administration and the highest yearly salary paid was \$3,600.

#### RENO EXPERIMENT STATION DEDICATED BEFORE NOTABLE GATHERING.

THE RARE AND PRECIOUS METALS station of the Bureau of Mines at Reno, Nevada, which will carry on investigations formerly made at the Golden station, was formally opened January 20. The station will be operated by the Bureau of Mines in cooperation with the Mackay School of Mines of the University of Nevada. Dorsey A. Lyon, supervisor of stations and chief metallurgist of the Bureau of Mines and Francis C. Lincoln, dean of the school of mines of the University of Nevada, were in charge of the dedication ceremonies.

The following mining school representatives and Bureau of Mines station heads were in attendance: Elmer A. Holbrook, chief metal mining engineer and executive officer in charge of the investigations branch; Harrison E. Meyer, chief clerk; Charles E. van Barneveld, superintendent, Southwest Experiment Station; Lionel H. Duschak, superintendent, Pacific Experiment Station; Samuel C. Lind, superintendent, Rare and Precious Metals Experiment Station; Oliver C. Ralston, superintendent, Northwest Experiment Station; Thomas Varley, superintendent, Intermountain Experiment Station; Gurdon M. Butler, dean of the school of mines, University of Arizona; Frank H. Probert, dean of the school of mines, University of California; Joseph F. Merrill, dean of the school of mines, University of Utah, and Milnor Roberts, dean of the school of mines, University of Washington.

#### NEW HEAD FOR BARTLESVILLE EXPERIMENT STATION

AFTER SERVING AS ASSISTANT for one year, H. H. Hill has been appointed superintendent of the Petroleum Experiment Station of the Bureau of Mines, Bartlesville, Oklahoma. His appointment was made retroactive to January 1, when he actually assumed direction of the station's work.

Beginning as a chemist, Mr. Hill has spent several years with the Bureau of Mines. He became one of the service's specialists, devoting his attention principally to refinery engineering. His experiences will come in handy at Bartlesville, for the station operates a complete refinery in miniature. While detailed at Pittsburgh and Washington Mr. Hill prepared, in conjunction with E. W. Dean, Bulletin 191, "Quality of Gasoline Marketed in the United States," and Technical Paper 181, "Determination of Unsaturated Hydrocarbons in Gasoline."

Mr. Hill succeeds Earl W. Wagy, who became superintendent when A. W. Ambrose was called to Washington to take up the work previously carried on by J. L. Lewis as chief of the petroleum division. Mr. Wagy resigned from the Bureau of Mines service to accept a position as production engineer with the Standard Oil Company of California.

M. J. Kirwan, formerly oil and gas supervisor for the California State Mining Bureau, has been detailed to the Bartlesville station to take charge of drilling and production work. He recently spent a year in Japan with the Nippon Oil Company.

#### Nine Months Coal Output

COAL PRODUCTION during the first nine months of 1920 was 462,933,000 tons, an increase of 54,288,000 tons over the corresponding period of 1919. Exports totalled 30,503,066 short tons, valued at \$230,405,281. Of this export tonnage, 26,387,215 tons was bituminous and 4,115,851 tons was anthracite.

## NEW IDAHO SENATOR APPRECIATES NEEDS OF MINING INDUSTRY

**I**F FELLOW SUFFERERS can always be relied upon to help one another out in emergencies, then the mining industry of America ought to be able to lean upon Senator F. R. Gooding of Idaho with the most implicit and trusting kind of reliance. For he also has suffered in the mining game, having endured the keenest and intensest kind of agony at a time of life when all suffering is more or less agonizing. He lost the first twenty-six hundred dollars he ever had in a mining venture.

That, however, was not the end of his experience with mining operations. Having come from England just as the Civil War was closing, and having received a common school education at Paw Paw, Mich., and having moved to California when he was fifteen and to Idaho when he was twenty-one, it goes without saying that he was of one of the pioneering kind who would never let a combination of disappointment, disillusionment and total disbursement of all his funds put a permanent check upon his progress in any particular direction. He stuck right with the mining game, albeit to another phase of it, and from 1881 for about ten years thereafter he was a successful mining contractor in the Wood River country. During this period he saw so much of mining and so little of everything else that to this day he summarizes his experiences of the whole decade in the one sentence: "I spent ten years in a mining camp."

At the end of the decade he found time for other things. For one thing, he served as a member of the Idaho Senate, and for another he became chairman of the Republican State Central Committee. He also served as governor of

the state. During all this time, and the period which has intervened since, he farmed and raised sheep, and for the last several years (including the present one) he has cultivated several thousand acres of land and has been the

owner of some of the largest flocks of sheep in Idaho. But he has never forgotten that his first success in life, as well as his first setback, was due to his activities in the mining field. He has always kept posted on the progress and the needs of the industry, and when on January 15 he took the oath of office he carried into the Senate Chamber a thorough knowledge of the mining situation of today and a keen appreciation of its present needs.

"I am familiar with the conditions and needs of the industry and I have always been one of its friends," he said to a representative of the Mining Congress Journal while getting straightened out in Room 341 of the Senate Office Building.

"I appreciate the importance of the mining industry, the drawbacks and the hardships which surround it and which go with it. The industry, as you know, needs protection. It and all other lines will have to have greater protection than ever before. Prices, wages, freight rates will never go

back to pre-war levels. The need for tariff protection ought to be apparent."

Senator Gooding defeated Senator John F. Nugent in the general election. When Senator Nugent's appointment to a federal office was confirmed, Governor D. W. Davis appointed Senator Gooding to serve out the unexpired portion of his term.



SENATOR F. R. GOODING  
of Idaho

### LUMBER INVESTIGATION NEXT

THE DEPARTMENT OF JUSTICE during the second week in January announced a general investigation of lumber interests and a decision to push its inquiry into the building materials situation, particularly in connection with the Lockwood investigation in New York. The Southern yellow pine industry, according to the announcement, will receive special attention. The Justice Department's announcement followed the submission to Congress of a bulky report by the Federal Trade Commission of the national lumber situation.

### WESTERN SUPERINTENDENTS CONFER

SUPERINTENDENTS of Western Experiment Stations of the Bureau of Mines held a conference at Berkeley, Cal., January 24-26. Dorsey A. Lyon, chief metallurgist and supervisor of stations, was in charge. All of the station superintendents and mining school deans who took part in the dedication of the Reno experiment station on January 20 attended the Berkeley conference. A special meeting was held for an exchange of opinion on current subjects between the superintendents and the mining school heads.



## RESUME OF YEAR'S FIVE-METAL OUTPUT OF ROCKY MOUNTAIN STATES

**M**ETAL PRODUCTION in eleven Western mining states during 1920 showed, on the whole, either in quantity or value or both combined, heavy reductions as compared to that of 1919. Depressing market conditions, freight rate increases and expensive labor and materials were the causes.

Arizona was the only state whose gold production during the year was greater than that of 1919, although Oregon's output was almost as large. Silver production increased in five states and declined in six. Increased copper output was noted in six states, but in each state in which values were calculated it was shown that they were smaller than in 1919, notwithstanding increase in output. Lead production increased in seven states and declined in two, results in two other states not being known. The value of output in Montana was greater than in 1919, notwithstanding smaller production. Arizona and Colorado were the only states whose zinc production declined, with reports from Oregon and South Dakota not in.

Idaho, Montana, Nevada, Utah and Washington, despite adverse conditions, emerged at the end of the year with incomes from the five metals combined exceeding those of the year before. In each state, the falling off in some metals was counterbalanced by increases in the value of others. Idaho, according to preliminary figures, enjoyed the most successful year of any of the Rocky Mountain States, its five-metal production being about 50 per cent greater than in 1919. This showing was made by an increase of 35 per cent in silver and of more than 100 per cent in lead.

A survey of the year by states follows:

**ARIZONA.**—Although the quantity of output of the five metals, except zinc, increased during 1920, the value, \$107,725,000, represented a decrease of \$3,433,000 below 1919. The low price of copper was responsible for the diminished total.

Production figures for the two years are shown in the following table:

	1919	1920
Gold.....	\$4,506,413	\$4,686,000
Silver (fine ounces).....	5,266,605	5,532,000
Copper (lbs.).....	538,100,844	559,235,000
Lead (lbs.).....	10,203,078	14,000,000
Zinc (lbs.).....	1,717,000	1,457,000

Arizona gold production increased in 1920 as a result of the slight improvement in production from copper ore and the steady output from the Oatman, Mohave County, region. More than half the output of the state came from Mohave County.

The silver output increased in value from \$5,898,598 to \$6,032,000. Although the quantity of copper production increased in 1920, the value decreased from \$100,086,757 in 1919 to about \$95,741,000 in 1920. Most of the smelters produced more copper than in 1919, but no effort was made to equal the production record of 1918. Toward the end of the year many companies were operating at a loss.

Lead production increased in value from \$540,763 in 1919 to \$1,147,000 in 1920. The recoverable zinc output decreased in value from \$125,341 to \$118,000.

Arizona mining companies during the first eleven months of 1920 paid in dividends \$16,706,783, exclusive of \$4,500,000 of the Phelps Dodge Corporation, which also operates mines in Mexico and New Mexico.

**CALIFORNIA.**—Labor conditions were still unsatisfactory at the close of the year. Expensive and inefficient workmanship was responsible for the closing down of many large mines and of the curtailment of operation in others. Other factors contributed to reduce production, as seen in the table:

	1919	1920
Gold.....	\$16,695,955	\$13,933,600
Silver (fine ounces).....	1,107,189	1,538,660
Copper (lbs.).....	21,732,507	12,934,900
Lead (lbs.).....	3,568,267	5,071,600
Zinc (lbs.).....	472,990	1,572,500

Charles G. Yale, of the San Francisco office of the Geological Survey, who made the report on this state, said it was almost impossible to obtain capital for gold mining, as very few mines were making a profit. "Some large producers are unwilling to push production and development and pay the consequent war income tax, so they are only keeping the mines running" Mr. Yale said. "The force of men engaged in all kinds of mining work has been cut down. The cost of producing gold has been steadily rising for several years, until it nearly prohibits all profit." Except for dredging, the gold mining industry would be at a still lower ebb, Mr. Yale holds. Of the 1920 production, 52 per cent was obtained from lode mines and 42 per cent from placers. At the end of the year the dredges were producing 96 per cent of the placer gold, or 46 per cent of the state's entire output.

The greater part of the silver output of 1920 came from lead-silver ores in the southern part of the state. The increase in lead was due entirely to the production of one mine in southern California, which reported no output in 1919.

**COLORADO.**—The 1920 production of gold, silver and zinc showed decreases, while that of lead and copper showed gains, according to Charles W. Henderson of the Geological Survey. Following are the figures for two years:

	1919	1920
Gold.....	\$9,867,927	\$7,650,000
Silver (fine ounces).....	5,639,516	5,400,000
Copper (lbs.).....	3,310,675	3,600,000
Lead (lbs.).....	35,859,090	44,600,000
Zinc (lbs.).....	51,445,429	42,000,000

The increase in output of lead and copper and the maintenance of zinc production to 80 per cent of the 1919 level is attributed to continued operations of a concentration-flotation plant in San Juan County.

**IDAHO.**—The five-metal output of 1920, according to C. N. Gerry of the Geological Survey, approximated \$32,144,000, which was \$13,770,000 more than the 1919 production. The year's output of the different metals, as compared with 1919, follows:

	1919	1920
Gold.....	\$713,238	\$469,000
Silver (fine ounces).....	5,579,056	7,545,000
Copper (lbs.).....	3,122,763	2,203,000
Lead (lbs.).....	182,341,898	254,662,000
Zinc (lbs.).....	15,994,229	28,309,000

Silver production increased more than 35 per cent, and its value increased from \$6,248,543 in 1919 to about \$8,227,000 in 1920. The value of the mine output of



copper decreased from \$580,834 in 1919 to approximately \$377,000 in 1920. On account of the fact that the average price of lead was higher, the value of output increased from \$9,664,121 in 1919 to \$20,777,000 in 1920. The price of zinc was also considerably higher in 1920.

**MONTANA.**—The state's production for the year was valued by C. N. Gerry at \$64,685,000, an increase of \$2,648,000 over 1919. Production for 1919 and 1920 follows:

	1919	1920
Gold.....	\$2,229,588	\$1,742,000
Silver (fine ounces).....	12,541,181	12,427,000
Copper (lbs.).....	169,981,288	176,600,000
Lead (lbs.).....	34,437,764	32,144,000
Zinc (lbs.).....	168,763,823	203,953,000

Silver production decreased in value from \$14,046,123 in 1919 to approximately \$13,551,000 in 1920. As during former years, most of this silver came from copper ores, but considerable production was also obtained by smelting residue from zinc ores. The state remained the leading silver producer of the nation, with Utah a close second. Despite the increase in copper output, there was a decrease in value of \$1,377,000. Notwithstanding the decrease in quantity of lead production, the value of output increased from \$1,825,201 in 1919 to approximately \$2,623,000 in 1920. The 1920 zinc output was very close to the record mark of 1918. Its value was about \$16,520,000 as compared with a value of only \$12,319,759 during the year preceding. During the first eleven months of the year Montana operating companies paid approximately \$9,515,000 in dividends.

**NEVADA.**—The output of gold, silver, copper, lead, and zinc during 1920 was valued at \$23,960,000, or an increase of \$527,000 over 1919, according to Victor C. Heikes of the Geological Survey. Production figures follow:

	1919	1920
Gold.....	\$4,541,502	\$3,579,000
Silver (fine ounces).....	6,863,580	7,786,000
Copper (lbs.).....	52,331,175	55,790,000
Lead (lbs.).....	15,349,370	19,510,000
Zinc (lbs.).....	9,004,698	9,100,000

Silver increased in value from \$7,687,210 in 1919 to approximately \$8,480,000 in 1920. Copper, which increased in quantity, decreased in value from \$9,733,599 in 1919 to \$9,551,000 in 1920. The 1920 output was less than half of that of 1918. Lead production increased in value from \$813,517 in 1919 to \$1,592,000 in 1920, or nearly 100 per cent. The recoverable zinc output increased in value from \$657,343 to \$737,000.

**NEW MEXICO.**—Production in 1920 compares with that of 1919 as follows:

	1919	1920
Gold.....	\$651,000	\$476,000
Silver (fine ounces).....	\$22,000	762,000
Copper (lbs.).....	51,000,000	54,000,000
Lead (lbs.).....	2,940,000	2,600,000
Zinc (lbs.).....	8,000,000	11,840,000

These figures are based on the report of Charles W. Henderson of the Geological Survey.

**OREGON.**—Despite adverse conditions Oregon almost held its own in gold production. The 1920 output was estimated by Charles G. Yale at \$942,200, a decrease of only \$38,645 over 1919. The 1920 silver output was 199,940 ounces, an increase of 88,819 ounces over 1919. The copper production of 1920 was 2,300,000 pounds or about 85,000 pounds more than in 1919.

Mr. Yale regards the circumstance that the Oregon metal output has remained virtually stationary during a two year period of depression as an indication that it has

reached its lowest point and that improvement may therefore be expected. Only seventy or eighty mines were producing at the end of the year as against between 150 and 200 which formerly showed an output from three to four times greater than that of 1920. High wages, expensive supplies, scarcity of labor and lack of water for mining and power all served as handicaps. Mr. Yale is of the opinion that normal conditions will see many of the idle mines in full blast again.

**SOUTH DAKOTA.**—The state's gold production in 1920 was \$4,339,000 as compared with \$4,862,586 in 1919, and \$6,565,337 in 1918. Silver production was 68,035 ounces as against 115,522 ounces in 1919, according to the estimates of Charles W. Henderson of the Geological Survey.

**UTAH.**—The value of the five-metal output for 1920 was \$46,000,000, a slight increase over 1919, according to Victor C. Heikes. Gold and copper decreased considerably, silver fell off slightly and lead and zinc increased. Here, as elsewhere, production was hampered by the high cost of mining, milling, smelting and refining, and in August the increased freight rate on ore and bullion presented another serious obstacle. Comparative figures for two years follow:

	1919	1920
Gold.....	\$2,159,471	\$1,949,000
Silver (fine ounces).....	11,649,961	11,618,000
Copper (lbs.).....	124,061,807	117,000,000
Lead (lbs.).....	123,829,051	143,000,000
Zinc (lbs.).....	4,431,024	6,000,000

More than half of the state's output of gold came from the Bingham District, about 30 per cent from the Tintic District and the remainder from Park City and other camps. Most of the gold production was obtained from siliceous, copper and lead ores treated at the smelting plants. The only considerable production by cyanidation was in Piute County. The silver output decreased in value from \$13,047,956, in 1919, to \$12,664,000, in 1920. Silver producers took advantage of the foreign market during the first five months of the year when the price was above one dollar per ounce and of the Pittman Act thereafter. The average price for the year was about \$1.09 an ounce.

The 1920 price of copper was slightly less than that of 1919, hence the value of the output was decreased from \$23,075,496 in 1919 to \$19,991,000 in 1920. Most of the copper produced came from Bingham, where the monthly yield remained steady through the year at more than 9,000,000 pounds. Lead production increased in value from \$6,562,940 to about \$10,939,000.

The recoverable zinc output increased in value from \$323,465 in 1919 to \$487,000 in 1920.

**WASHINGTON.**—The value of the five-metal output for the year was approximately \$1,193,000, an increase of \$224,039 over that of 1919, according to C. N. Gerry. The decrease in gold and silver was more than offset by the increase in copper, lead and zinc. Production figures follow:

	1919	1920
Gold.....	\$252,862	\$142,000
Silver (fine ounces).....	259,384	193,000
Copper (lbs.).....	1,676,576	2,394,000
Lead (lbs.).....	2,146,157	5,079,000

The value of the 1920 silver output was \$210,000, a falling off of \$80,510 from 1919. The copper output increased in value from \$311,843 in 1919 to \$409,000 in 1920. The lead output increased in value from \$113,746 to about \$415,000. Several hundred tons of zinc ore were shipped from the Northport district in 1920, marking the first large output of zinc in the state since 1917, when the Last Chance mine was operated.

## CAN METAL MINING AGAIN RANK FIRST IN COLORADO?

**L**OW GRADE AND COMPLEX COLORADO ORES have been investigated by the United States Bureau of Mines and the Colorado School of Mines with a view to enabling metal mining to regain something of its former importance as the first industry of the state. The investigation, begun in January, 1920, was completed in December. A summary of work done and conclusions reached has been issued by the Bureau of Mines and a full report of results of field and laboratory work will soon be issued by the Colorado School of Mines.

The state of Colorado appropriated \$15,000 for the work. Mining in the state now ranks below agriculture, live stock and manufacturing, its fall from first place being due partly to the decrease both in quantity and value of mineral production and partly to the rapid growth of other industries. The richer and more accessible ores having become largely exhausted, it was decided to determine the character and approximate extent of low grade and complex ores, and where these ores were obtained in sufficient quantity to conduct concentration tests at the Golden laboratories in an effort to devise a cheap and suitable treatment. It was thought that this might make available a large amount of low grade material left in the mines, on the dumps or in unworked deposits.

In preparing the preliminary program, the Bureau of Mines was represented by Dorsey A. Lyon, chief metallurgist and supervisor of stations, Dr. R. B. Moore, chief chemist, Dr. S. C. Lind, superintendent of the Golden station, and W. H. Coghill, metallurgist. The Colorado School of Mines was represented by Dr. V. C. Alderson, its president, J. C. Williams, assistant director of its experiment plant and several members of the faculty. General direction of the work was entrusted to Dr. Lind and Dr. Alderson. Cooperation during the investigations was vouchsafed by Horace E. Lunt, state mine commissioner; M. B. Tomblin, secretary of the Colorado Metal Mining Association, and State Senator J. G. Clattery. R. R. Hornor, mining engineer of the Bureau of Mines, conducted the field survey, assisted by B. C. Essig, representing the state. They visited each of the principal mining districts and studied mining and milling practices, the character of ores being mined and milled and the treatment of problems involved. Altogether, they took sixty-three ore samples and had them tested at Golden. The results of their investigations, together with conclusions and recommendations, are outlined in the following report by Messrs. Hornor and Coghill of the Bureau of Mines:

"The low-grade ores occur both as oxides and sulphides, the latter being the more abundant. The sulphides are usually of complex nature and frequently consist of an intimate mixture of galena, sphalerite, pyrite, and chalcopryite, together with the sulphantimonides and sulpharsenides of silver.

"In the Central City and Idaho Springs districts, in southern Gilpin County and northern Clear Creek County, the ores may be classified according to the predominating metals as gold-silver ores, copper ores, and uranium ores. The gold-silver ores may be grouped in three types—pyritic ore with some chalcopryite, galena, sphalerite with pyrite and chalcopryite, and composite ores intermediate between the first and second types. The veins are worked chiefly for gold and silver, and in some deposits, copper, lead and zinc are the important minerals.

"At Georgetown and adjacent districts in Clear Creek County, the ores are chiefly gold-bearing pyritic ore, and silver ores containing chiefly galena, blende, and pyrite.

"The marked decline in mining in Gilpin and Clear Creek Counties is due primarily to depletion of the richer ore-bodies, and impoverishment of ores with depth. To some extent the complexity of the

ores and difficulties in treatment, with high costs of mining, freight rates and smelter rates, is responsible, but the chief cause is lack of ore. The mines offer little encouragement of finding important ore-bodies below depths already attained.

"Two methods of procedure are suggested as a possible means of helping the industry. The first is the establishment of central custom mills employing improved methods, for treating the complex ores. Such mills might best be owned and operated on a cooperative basis. The second is that careful and systematic prospecting be done along the strike, and in hanging and footwalls of the veins in those zones known to have contained rich ore bodies, in order to disclose deposits overlooked in early operations. This work would be much more likely to disclose ore of commercial grade than any search in the zones opened by the various deep tunnels of the district, which in every instance have been disappointing and have not given the results predicted by their promoters.

"Leadville, in Lake County, is still unquestionably the premier mining district of the State. The bulk of Leadville's present production is sulphide ores, chiefly pyrite carrying gold and silver which are smelted direct. The second largest tonnage is of mixed sulphides of iron, lead, and zinc. The higher grade zinc ore is smelted direct but the lower grade and mixed sulphide is concentrated. Of the oxidized ores, iron oxide carrying manganese, and zinc oxide are the more important; oxidized lead ore forms only a small part of the production. These are smelted direct. Siliceous sulphide ores, carrying gold, silver and copper are mined in large quantities and either smelted direct or concentrated to eliminate silica.

"The milling of Leadville's low-grade sulphide ores has not been conducted locally with any degree of success, as various idle mills erected attest. Only one mill is now in operation, the Leadville District mill, which is treating siliceous pyritic ore. At the time of this survey, mining at Leadville was at the lowest ebb it has reached in many years. This depression may be attributed in part to high costs of operation, but the main cause is the inability to mine and treat at a profit, the low-grade and complex ores, both oxide and sulphides, of which large tonnages are known to exist, notably the low-grade oxidized silver ores on Fryer Hill, and the low-grade and mixed sulphides of lead, zinc, and iron on Carbonate Hill, Iron Hill, and Breese Hill. Granting that a cheap milling method can be worked out, cheaper methods of mining and handling the ores must be devised. To do this, mining on a large scale and consolidation of small units seems essential.

"The mining districts tributary to Breckenridge, Kokomo and Montezuma, in Summit County and Alma, in Park County, have in the past produced large quantities of the precious metals. Present mining is being done for the lead and zinc, which since 1909 have exceeded the value of gold and silver produced, indicating that mining in the future must depend on the base metals after depletion of the surface deposits carrying the precious metals.

"In the Bonanza district, in Saguache County, the ore being mined is sulphide ores carrying iron, lead, zinc and copper, with gold and silver tellurides and finely disseminated native silver. In the northern part of the district, lead-zinc-silver ores predominate, and in the southern, gold-copper ores. There is also a manganese belt in which manganese minerals are abundant. At some of the mines, notably the Rawley, there is a large tonnage of complex ore that would justify careful study of milling problems.

"In the mining region surrounding Aspen, in Pitkin County, the ores mined are chiefly silver sulphides associated with lead and zinc sulphides. The silver production has decreased to less than one-tenth what it was in early years. No estimate could be made of the approximate quantity of low-grade ore available, but, judging from the past history of the district, it is presumably large.

"Neither the Monarch-Garfield district, in southwestern Chaffee County, nor the Tomichi district in Gunnison County, have been large producers as compared with other districts; the Madonna mine at Monarch has been the star producer. These districts contain no ores that present unusual difficulty in treatment.

"The Creede district, in Mineral County, produces chiefly oxidized silver ore with a siliceous gangue, and a small amount of sulphide ore carrying lead, zinc, iron, silver, and gold. The oxidized ore is smelted direct. The high silica content is objectionable to the smelters, and ore below a certain grade is unmarketable, because of the high smelter charges and high freight rates. The principal reason for the decline of this district is the lack of ore of shipping grade. No reliable estimate can be formed of the amount of low grade or complex ores available.

"In the San Juan district, with the exception of Telluride, the ores mined are chiefly sulphide ores carrying silver, lead, zinc, and copper. In the early days of the district, the richer ores were smelted direct, later concentration mills were erected to treat the second-class ores. As the mines attained still greater depths, the deposits

became barren or changed to ore of too low grade to work under the then existing conditions. In recent years the increased costs of mining and treatment, and higher freight rates has made working of the low grade ore impracticable.

"Telluride has always been a gold camp, with a small production of base metals. At first the ores were treated by stamp milling and cyanidation. With the exhaustion of the free milling ores, concentration became necessary, and the present practice is treatment by gravity concentration and flotation.

"With one or two exceptions, no large deposits of low-grade ore are known to exist in the San Juan district.

"The metallurgical work was under the direction of W. H. Coghill, metallurgist, assisted by C. O. Anderson, J. P. Bonardi, and Max Shapiro, of the Bureau of Mines, and J. C. Williams and E. V. Engels representing the State. The first steps was to make a careful physical examination of the ore, followed by chemical analysis to determine the content and character of the mineral present. If this showed that the valuable minerals present were so intimately associated or "locked" in the ore that they could not be readily separated, then methods of treatment were applied which experience had shown would be most likely to give the desired results. In all 29 of the ores submitted were examined and their amenability to concentration determined insofar as time permitted. The principal processes tried were flotation, gravity concentration, and cyanidation. The most promising results were obtained by using flotation combined with gravity concentration. Differential flotation, or flotation of one mineral in advance of another, to make a complete separation, is not applicable, except in rare instances, to Colorado complex ores.

"From the complex sulphide ores galena and the precious metals were recovered as far as possible by gravity concentration. To recover the finest grains of galena, the chalcopryite and the remainder of the gold and silver, means had to be devised to float them in advance of the sphalerite. Sodium sulphide was found to be a valuable reagent in this step. Results in the laboratory tests with sodium sulphide, and with an acid solution of sodium dichromate to grade up the zinc by flotation, have been so successful that they should receive further attention.

"The principal function of the dichromate was to remove the iron sulphide from the zinc, but it also removed some of the lead, silver, and gold.

"The oxidized ores were tested principally by cyanidation, but some flotation tests were made. Some of the ores were readily amenable to cyanidation; but others proved refractory. The work, on account of the limited time and the large number of ores examined, was necessarily of a cursory nature. In general, the results are encouraging, and detailed examination of the more promising ores is now justified."

#### GEORGE E. COLLINS RE-ELECTED GOVERNOR OF COLORADO CHAPTER

**G**EORGE M. TAYLOR was re-elected president of the Colorado Metal Mining Association at the annual meeting recently held. Other officers chosen were: Jesse F. McDonald, R. M. Henderson and Bulkeley Wells, vice-presidents; A. M. Collins, treasurer; and M. B. Tomblin, secretary.

Officers elected by the Colorado Chapter of the American Mining Congress are the following: George E. Collins, governor; J. F. Welborn, Charles A. Chase and George A. Stahl, vice-governors; A. M. Collins, treasurer; and M. B. Tomblin, secretary.

Legislation levying a special tax upon all mining property in Colorado for the benefit of the mining industry was recommended. The proposed special tax provides for the collection of one-tenth of one per cent on the assessed valuation of all metalliferous properties in the state, the money to be placed in a metal mining fund to be administered by a board of nine members appointed by the governor. Several Colorado state legislators attended the meeting and expressed approval of the bill.

Resolutions expressing disapproval of further "blue sky" legislation were voted down, and the committee considering such matters limited its recommendations to the enactment of constructive measures. Several of the delegates asserted that additional "blue sky" legislation would be unnecessary if the legislature would amend the present fraud law so as to protect investors adequately.

#### WESTERN PHOSPHATE PRODUCTION SHOWS HEALTHY INCREASE

**T**HE NOTABLE FEATURE of the phosphate rock industry in 1920, according to the United States Geological Survey, Department of the Interior, was the increase in production in the Western States. The shipments from mines in Idaho ran from 2,000 to 3,500 tons a month in the early part of the year but were more than 8,000 tons in a single month after midsummer. About 20,000 tons was shipped before July, more than in any previous entire year. The total output of the Western States in 1920 is estimated at 65,000 tons, in comparison with 17,000 tons in 1919.

Shortage in the supply of freight cars hampered the industry in Tennessee, but the production of the old and some of the new companies was probably considerably greater than in 1919.

Operations on Florida phosphate were pushed throughout the year and the push made up in part for the loss caused by the long strike in 1919. The shipments from the pebble field were probably more than 2,000,000 tons, and it is estimated that the total shipments from the state were as great as those in the peak year, 1913, and may even have surpassed them. The demand for phosphate for exportation was good, and many shipments were made to northern Europe.

Total production of phosphate rock in the United States in 1920 was about 3,265,000 long tons, as compared with 2,249,000 tons in 1919.

#### ASBESTOS EXPLORATIONS IN THE WEST

THE U. S. GEOLOGICAL SURVEY hopes that the import of long-fiber asbestos from Canada, from which this country obtains the greater part of its high grade supply, will eventually be reduced by large deposits which may be found in the western states. The survey looks particularly to Arizona, where asbestos of especially long fiber and silky texture has been discovered.

In the Apache and San Carlos Indian reservations, in Arizona, asbestos is found associated with rocks known by geologists as the Apache group, which is made up of several formations. The principal deposits are in the Salt River region, where the Apache group is represented chiefly by beds of quartzite and limestone, which are at many places invaded by diabase, an igneous rock. Throughout this area much diabase has been injected into beds of limestone, and the asbestos is found near the contact of the limestone with the diabase. Places where the limestone has been much broken by the diabase have been particularly favorable for the formation of asbestos. The asbestos is invariably associated with serpentine, a greenish mineral that is in some deposits in other regions mottled like a serpent's skin, and although serpentine occurs at many places without asbestos, serpentine "float" fragments of it that lie loose on the surface, having been washed out from its outcrop, are a valuable aid to the prospector for asbestos. In this region, asbestos itself also is generally found as float for a considerable distance below its outcrop.

TEXAS.—Metal production for the year was 520,000 ounces of silver and small amounts of gold, lead and copper, according to Charles W. Henderson. The silver mine at Shafter was in operation throughout the year.



# THE SETTLEMENT OF FEDERAL TAXES FOR PAST YEARS

BY ROBERT N. MILLER

**T**HE CRYING PRESENT NEED of every business of every kind is to find out once and for all what its tax bill to date is. At the present moment there is hardly a single corporate taxpayer that is sure all its tax is paid. The suspense in some cases is destructive of opportunity and fatal to successful operation. Delayed audits make it difficult for the banks of the country to be sure of the net worth of any business, since it is not uncommon for an additional assessment to wipe out an apparent surplus and disclose an actual impairment of capital. The department realizes these difficulties. This need can not be supplied without Congressional action; to my mind three measures would be serviceable towards producing the necessary result:

First, enact the proposed provision by which settlements reached between the taxpayer and commissioner may be made final and binding, both on the taxpayer and the government, unless actual fraud has been practised. Under present laws, the commissioner is required to reopen any case when he receives information tending to show a higher tax than has been assessed: New decisions of courts, or information received by the commissioner in the assessment of one corporation, casting light on the income received by another corporation or by individuals, may require additional assessment and examination after a case has been apparently closed. The provision for final settlement would have the virtue of making it possible for a taxpayer to be sure that his taxes for a certain year are finally and definitely paid and disposed of.

Second, provide for the commissioner of internal revenue sufficient funds to pay salaries to attract and hold an adequate number of men capable of dealing with these difficult questions with confidence and self-reliance. Decisive and broad-minded action cannot be secured in any business without paying for it. Men who have the knowledge and experience to carry such responsibility do not have to hunt for jobs. Such men are pursued by people who want to employ them. There are men in the work of the department who rank favorably in ability with the ablest accountants and technical men in the United States. In the legal department there are lawyers of first-rate ability. These men are underpaid, and are constantly receiving offers of salaries in multiples of what they earn now. Sooner or later they leave the service, and the new man requires nearly a year to get his bearings. They

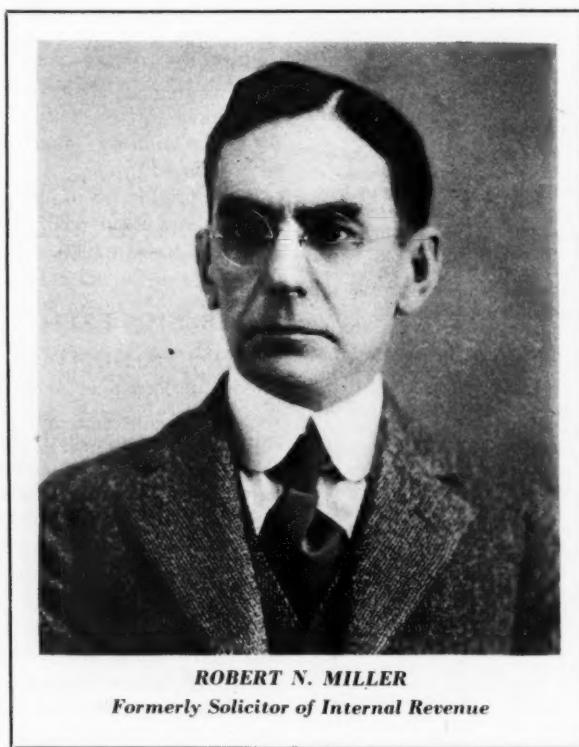
ought to be paid enough to make them stay. To collect and check four billions in taxes each year under a law as complicated as this, takes not only good men, but many of them, and that takes money. In my judgment, this policy would be so efficient in the collection of taxes from those who under the law are liable that the present economical administration of the law—approximately 53 cents to collect \$100.00—could still be maintained. An important and valuable suggestion has been made by the leading tax men in the American Mining Congress—to establish a settlement board to assist in the settlement of cases

under the proposed compromise provision just outlined for cases arising for the war period—the board to be of a temporary character, and to be composed of representative citizens of demonstrated judgment and ability, chosen for their fitness alone, and compensated on a basis which will prevent their service from involving too great a sacrifice. But this board could function only on a foundation of adequate salaries to keep men in the unit, because it would need accurate technical information on a case before it could begin to function.

Third, provide a tax court of appeals, where questions of law, arising under taxing acts, shall be promptly decided. Under present systems, there are nine courts of appeal, no one of them binding on the other, to which tax questions can go. Their views differ, and there is no unified authority short of the already overburdened Supreme Court. A tax court

of appeals would unify the appeals in a single court having the time and undivided attention to build up a special knowledge of business problems, and to decide the questions as they arise. Such a court should be provided with such technical assistance as would enable it adequately to study the whole field.

The delays and denials, the uncertainties and the harshnesses, under which the taxpayers have suffered so grievously are due, primarily, to the unexampled difficulties of the problem. So far Congress has not given to the commissioner of internal revenue, or to any one else, the power to decide what tax would be fair for each taxpayer. It has given him the task of administering a law which, with a few exceptions, is laid down unchangeably. And if Congress had given the incumbent of that office the opportunity of being a despot of that kind, in the hope that the despotism would be benevolent, the task of deciding what is "fair", aside from principle, would have proved almost



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impossible. Any one who says a desperately complicated law on a desperately complicated subject can be simply administered does not understand the problem. To train a Washington force to deal with many millions of highly involved tax returns each year is in itself a tremendous task; the task of keeping the field agents—who necessarily work in small groups all over the country—fully up to date on the thousand questions of construction, is much harder, although most of them are eager students.

Taking the situation as it is, rather than as it would be under different laws and lower tax rates, the wise taxpayer will seek sympathetically to study the position of the department, as well as his own case, and will succeed where others fail by presenting his case so that his arguments fit in with the other decisions the department must make.

However well informed the department is as to general theory and the particular facts of any case, the taxpayer in presenting his question ought to know still more about the theory of the law as applied to that particular case, and ought to know more about the facts of his own case than the department does at the outset. In a question which depends on what your statutory income is and what your statutory invested capital is, who ought to know more about it than yourself? And the department welcomes such knowledge—just as the best qualified judge expects lawyers in the case to know more about it—at the beginning—than the judge, and would be surprised at any lawyer who started out by asking the court what questions were involved and how they ought to be presented.

To dig through a thousand facts for the hundred which may show that your income or capital is abnormal is not a task that can be performed at a single sitting. A man who knows the particular business, and a man who understands the spirit of the provisions, must work together for a considerable time, in many cases, to sift the facts, eliminate the immaterial and assemble the really material facts in definite and compact form. The government desires to get the right answer; it will do all it can to dig out the facts which are favorable to the taxpayer, as well as to the others; but it is hardly reasonable to rely entirely on the government when the law has put the burden on you to do this long task of finding the evidence which you need. The practical truth of this is easily realized when we understand that each government auditor is likely to have piled up in his incoming basket a stack of files representing the problems of other taxpayers who are clamoring for attention.

In presenting his case to the bureau the taxpayer must be ready not only to show that his case is a just one, but he must be able to show also that it comes within a general rule which the department can safely follow without causing trouble in other cases and without violating the text of the law or fundamental principles which have already been recognized by the bureau. Every principle, consistently carried out, operates favorably to some taxpayers and unfavorably to others, but the department, of course, can have only one rule on the same principle. A single example: In a certain class of expenditures which are in the twilight zone between capital expenditures and business expenses, one group of taxpayers, who are not interested in excess profits taxes, are likely to contend that they are deductible expenses, diminishing income, while another class of taxpayers who need a substantial invested capital will contend that such expenditure should only be regarded as of a capital nature. The ultimate decision as to the deductibility of the items will work unfavorably to one of these taxpayers or another, and that taxpayer who succeeds will do so not on the ground of what is fair to him but because he has brought his case within the general principle which the government finds tenable in the light of experience and court decisions.

Especially is it worth while to analyze the decisions of courts so far as they construe regulations and rulings. Since 1909 there have been about 220 income tax decisions (including constructions of the corporation excise tax law). Nearly one-third of these have been decided the last fourteen months and the volume of these precedents is growing all the time. Incidentally, it is interesting to know that of sixty-three cases decided during a year, seventeen were under the corporations excise tax law, though involving general principles, forty related to income taxes imposed by later laws and four involved excess profits taxes. The department is especially interested in the bearing these current decisions have on any pending question.

Abandonment of the excess profits tax will remove many difficult questions for future years, yet as long as the United States must raise by taxation as much as three or four billions, the determination of tax liability, whatever the basis of the tax or the terms of the law, will involve serious and complicated problems.

The question is sometimes asked whether it is advisable for a taxpayer having business with the bureau to secure an introduction by some friend or acquaintance prominent in Washington. This is not necessary or even desirable. The best and only way to secure a favorable ruling from the department is to prepare the case thoroughly on the law and facts with a clear understanding of the particular issues on which the case will turn. If the case is so prepared it will receive the most careful attention. Any action which might be construed as the exercise of influence from any source is certain to be regarded by the auditors as an admission that the case is not a strong one on its merits.

When a taxpayer receives a letter from the bureau notifying him that additional taxes will be assessed, and it is felt that the additional assessment is not warranted, the taxpayer merely by writing promptly to the commissioner at Washington may get an appointment in Washington, prior to assessment, at which the details can be learned and any additional points of law and fact urged by the taxpayer or his representative. And if the income tax unit should refuse to make the adjustment desired provision is made by which the taxpayer can secure a hearing before an appeal committee, sitting with attorneys from the office of the solicitor of internal revenue or the solicitor himself, before whom a full presentation of facts and legal arguments can be made. If this process of appeal requires time, the assessment frequently goes forward, but a claim in abatement usually defers payment until the question is decided.

Even where a taxpayer has failed to reply promptly to a letter announcing an intention to assess additional tax and has delayed until an assessment is in the hands of the local collector for enforcement, the bureau has so arranged that, if he believes the additional tax is not correct, he may in every bona fide case secure a hearing and, if desired, a second consideration by the committee, and in nearly every case without paying the disputed tax until adjudication.

Hearings before the committee have the advantage, essential in any true appeal, that the committee comes to the question with fresh minds. Much depends upon retaining on the committee, or securing on any body which may supplement it, fully qualified men of broad viewpoint and the necessary knowledge of the problems of different industries.

A very practical question is: If these methods by which cases can be concluded are so well worked out, why are many of our returns still unaudited, and why are we kept in the dark as to whether we owe the government or the government owes us? The answer has been indicated—lack of power to settle finally, and lack of appropriation to hold the good experienced men or to secure the services of new men of broad knowledge. Help on these points

will go far to solve the problem. Settling the salaries question will solve another important problem: the need for decentralization, which must be delayed until the Washington office is stabilized.

We cannot, in my belief, afford to cut expenses in the administration of the tax law, but in other government expenditures substantial reductions seem possible. The greatest hope for tax relief lies in that; if our government does not spend so much, it will not have to collect so much in taxes. There is here a great and difficult field for constructive statesmanship; whoever can diminish the annual expenditure of the government will earn the fervent gratitude of his fellow citizens.

## SECONDARY BOYCOTT AND SYMPATHETIC STRIKE HELD TO BE UNLAWFUL

**B**Y A VOTE OF SIX TO THREE, the Supreme Court of the United States decreed that the Clayton Act did not authorize labor unions to conspire to restrain trade in violation of the anti-trust laws, and did not authorize them to conduct secondary boycotts or sympathetic strikes or to make the public suffer as a means of winning industrial battles, or to do anything else in itself unlawful.

The case was that of the Duplex Printing Press Company of Battle Creek, Michigan, against business agents of the International Association of Machinists. The printing press company employs less than two hundred and fifty men. The machinists' union called a strike, but only about fourteen men went out and the company continued doing business. Then the international union began a secondary boycott, nation-wide in its scope but particularly intensive in New York, where the company's business was heaviest. The company, in the federal district court of southern New York, sought an injunction and failed to get it, took the case to the circuit court of appeals, and again lost, whereupon it appealed to the Supreme Court of the United States, which reversed the decrees of the lower courts and remanded the case to the district court with instructions to grant the relief sought.

The Supreme Court in its opinion dealt specifically with Section 6 of the Clayton Act, which, with Section 20, has usually been construed by labor leaders as permitting members of unions to do things which it would be unlawful for others to do. Upon Section 6, the court had the following to say:

"The section assumes the normal objects of a labor organization to be legitimate, and declares that nothing in the anti-trust laws shall be construed to forbid the existence and operation of such organizations or to forbid their members from lawfully carrying out their legitimate objects; and that such an organization shall not be held in itself—merely because of its existence and operation—to be an illegal combination or conspiracy in restraint of trade. But there is nothing in the section to exempt such an organization or its members from accountability where it or they depart from its normal and legitimate objects and engage in an actual combination or conspiracy in restraint of trade. And by no fair or permissible construction can it be taken as authorizing any activity otherwise unlawful, or enabling a normally lawful organization to become a cloak for an illegal combination or conspiracy in restraint of trade as defined by the anti-trust laws."

The words "lawfully" and "legitimate" are emphasized by italics in the Supreme Court's decision, and the court's references to Section 20 of the Clayton Act stress the point that the measure was not intended to permit unions to do anything not "lawful" and "legitimate." To substantiate its own interpretation, the court considered the manifest intention of the lawmakers who enacted the Clayton Act. Extracts from this part of the Supreme Court decision follow:

"By repeated decisions of this court it has come to be well established that the debates in Congress expressive of the views and motives of individual members are not a safe guide, and hence may not be resorted to, in ascertaining the meaning and purpose of the law-making body. But reports of committees of House or Senate stand upon a more solid footing, and may be regarded as an exposition of the legislative intent in a case where otherwise the meaning of a statute is obscure. And this has been extended to include explanatory statements in the nature of a supplemental report made by the committee member in charge of a bill in course of passage.

"In the case of the Clayton Act, the printed committee reports contain extracts from judicial opinions and a then recent textbook sustaining the 'primary boycott', and expressing an adverse view as to the secondary or coercive boycott.

"Moreover, the report was supplemented in this regard by the spokesman of the House committee (Mr. Webb) who had the bill in charge when it was under consideration by the House. The question whether the bill legalized the secondary boycott having been raised, it was emphatically and unequivocally answered by him in the negative.

"The present case furnishes an apt and convincing example. An ordinary controversy in a manufacturing establishment, said to concern the terms or conditions of employment there, has been held a sufficient occasion for imposing a general embargo upon the products of the establishment and a nation-wide blockade of the channels of interstate commerce against them, carried out by inciting sympathetic strikes and a secondary boycott against complainant's customers, to the great and incalculable damage of many innocent people far removed from any connection with or control over the original and actual dispute—people constituting, indeed, the general public upon whom the cost must ultimately fall, and whose vital interest in unobstructed commerce constituted the prime and paramount concern of Congress in enacting the anti-trust laws, of which the section under consideration forms after all a part."

The court thereupon decreed as follows:

"There should be an injunction against defendants and the associations represented by them, and all members of those associations, restraining them, according to the prayer of the bill, from interfering or attempting to interfere with the sale, transportation, or delivery in interstate commerce of any printing press or presses manufactured by complainant, or the transportation, carting, installation, use, operation, exhibition, display, or repairing of any such press or presses, or the performance of any contract or contracts made by complainant respecting the sale, transportation, delivery, or installation of any such press or presses, by causing or threatening to cause loss, damage, trouble, or inconvenience to any person, firm, or corporation concerned in the purchase, transportation, carting, installation, use, operation, exhibition, display, or repairing of any such press or presses, or the performance of any such contract or contracts; and also and especially from using any force, threats, command, direction, or even persuasion with the object or having the effect of causing any person or persons to decline employment, cease employment, or not seek employment, or to refrain from work or cease working under any person, firm, or corporation being a purchaser or prospective purchaser of any printing press or presses from complainant, or engaged in hauling, carting, delivering, installing, handling, using, operating, or repairing any such press or presses for any customer of complainant. Other threatened conduct by defendants or the associations they represent, or the members of such associations, in furtherance of the secondary boycott should be included in the injunction according to the proofs."

## Sodium in 1919

A TOTAL OF 7,093,138 tons of sodium salts valued at \$28,165,901 was produced from natural resources in the United States in 1919. Production was somewhat lighter than in 1918, with its 7,262,797 tons, but the value of output was greater, the 1919 figures being \$27,933,149. The Geological Survey's figures for 1919 are divided as follows: Salt in brine, 2,809,000 tons; rock salt, 1,637,300 tons; evaporated salt 2,618,200 tons; sodium carbonate, sodium bicarbonate, sodium sulphate and borax, 28,638 tons.

Sodium salt importations during 1910 for domestic consumption totaled 1,044,713,473 pounds valued at \$20,703,514, as compared with 1918 importations aggregating 4,223,449,559 pounds with a value of \$90,939,431. Exportations of domestic sodium salts in 1919 aggregated \$18,545,420 as compared with \$22,291,735 in 1918. Foreign sodium salts exportations in 1919 totaled \$387,090 as compared with \$73,402 in 1918.

## INCREASES IN OUTPUT OF ANTHRACITE AND BITUMINOUS DURING 1920

**P**RODUCTION OF BITUMINOUS coal in 1920 totalled 556,516,000 net tons, according to figures of the Geological Survey, which may later be revised. This is an estimate based on records of shipments over the principal coal-carrying roads, and will be revised upon receipt of figures from certain of the railroads covering shipments during the last week of the year. The margin of error will probably not exceed 2 per cent and may be considerably less. The year's production was 98,453,000 tons greater than that of 1919.

The average output per working day during the year was 1,805,000 tons as compared with 1,485,000 during 1919, 1,180,000 during 1918, and 1,794,000 during 1917. The total production during the three preceding years was: 458,063,000 tons during 1919; 579,386,000 during 1918, and 551,790,000 during 1917.

Preliminary estimates also based on reports of cars loaded indicate a total production of anthracite for the calendar year 1920, including mine fuel and sales to local trade, of 89,100,000 net tons. This was an increase of 1,000,000 tons or 1.1 per cent over 1919. Production during the four preceding years was: 1919, 88,000,000 tons; 1918, 99,000,000 tons; 1917, 100,000,000 tons; and 1916, 88,000,000 tons.

**ANTHRACITE** shipments for the year just closed, with December estimated, are given by the Anthracite Bureau of Information, Philadelphia, as follows:

	Tons.
January.....	5,868,835
February.....	5,046,483
March.....	6,077,821
April.....	4,814,211
May.....	6,155,878
June.....	6,319,957
July.....	6,389,100
August.....	6,207,653
September.....	3,592,954
October.....	6,240,901
November.....	5,765,347
December.....	6,250,000
Total.....	68,729,140

Production of all coal during the year just closed was approximately 646,000,000, or 100,000,000 tons more than during 1919. This was 6,000,000 tons less than 1917 and 32,000,000 less than 1918, but far greater than 1916, when the total was only 591,000,000.

The beehive coke production during 1920 was 20,833,000 net tons as compared with 19,950,000 tons during 1919, or an increase of 6 per cent.

### FEWER MINE FATALITIES

A MARKED DECREASE in the number of fatal accidents was one of the outstanding features of the coal

mining industry in 1920. Reports of state mine inspectors for the first eleven months of the year, received and consolidated by the Bureau of Mines, showed that 1,983 men lost their lives through mine accidents, as compared with 2,146 during the parallel period of 1919.

The decrease in fatalities due to explosives was 87, or 44.2 per cent, as compared with 1919. This was the most notable decrease of the year. Accidents caused by gas and coal dust explosions showed a decrease of 34 fatalities, or 19.3 per cent. There was a reduction of 31 fatalities, or 25.4 per cent, in miscellaneous accidents underground. There was practically no change in the number of accidents due to falls of roof and coal. Haulage accidents above ground showed a decrease of 16 fatalities,

or 19.3 per cent. There was a slight increase in the number of accidents caused by electricity.

Seven mine disasters in each of which five or more men were killed characterized the year. From these disasters 49 deaths resulted as compared with 201 during the preceding year.

Coal mine fatalities during the two years are shown by months in the table printed elsewhere on this page.

### U. S. COAL BILLS GO UNPAID

Government Departments do not pay their coal bills promptly, if the experience of Dr. F. G. Cottrell while he was director of the

Bureau of Mines can be taken as a criterion. Dr. Cottrell told a subcommittee of the House Committee on Appropriations that the departments during one month of last year owed the government fuel yards approximately one million dollars and that they still owed \$747,097.30 on their October accounts after the Bureau of Mines had paid producers everything owing to them except \$100,765.59.

The government fuel yards have a working capital of \$1,154,088. "If the departments would pay their bills promptly and by checks instead of transfer warrants, which seem to require so much time, the working capital could be greatly reduced," Dr. Cottrell said.

The yards handled 269,000 tons of coal in Washington last year. This coal cost \$1,674,147.14 f.o.b. Washington, and was sold for \$1,904,071.51, leaving a gross profit of \$229,924.37. The difference covered all expenses, such as overhead, yard, garage and trucking expenditures, and amounted to \$1.138 per ton handled.

The fuel yards deliver coal at eight-hundred places, handling from forty to fifty cars daily. About 250,000 tons of anthracite and 25,000 tons of bituminous are handled yearly. Great difficulty was experienced by the yards in getting fuel last year, but it is now rolling into the yards as fast as it can be handled and orders are being sought by shippers.

The reduction in coal mine fatalities during the calendar year 1920 was especially gratifying in view of the fact that it was accompanied by an increase of more than 16 per cent in the output of coal. The number of lives lost for each million tons of coal produced, according to calculations of the United States Bureau of Mines, was 3.39 in 1920 as compared with 4.28 in 1919.

### COAL-MINE FATALITIES, BY MONTHS, 1919-1920.

	1919	1920
January.....	183	199
February.....	160	153
March.....	171	174
April.....	189	157
May.....	185	167
June.....	295	212
July.....	222	196
August.....	223	185
September.....	179	188
October.....	244	190
November.....	95	162
December.....	171	...
Total.....	2,317	1,983



**ALASKAN COAL NOT DELIVERED.**

REPRESENTATIVE M'FADDEN of Pennsylvania said in the House recently that coal was not being delivered by the Alaskan Railroad as had been promised during discussion in the House of the bill providing for construction of the road. He asserted "that nobody has seen a pound of the coal which was to be brought down in large quantities to Seattle" and that the Navy was burning oil or buying coal from England at from \$25 to \$30 per ton, but was not getting anything from Alaska.

Representative Miller of Washington came to the defense of the railroad, saying that facilities were being installed which would result in the delivery of coal to tidewater for use of the navy. At no distant date, he said, the Pacific Fleet would use some of the finest coal produced, and it would come from Alaska.

**Wholesalers' Counsel Holds Seizures Of Contract Coal Illegal.**

CONFISCATION BY RAILROADS of coal shipped under definite contract price is illegal, in the opinion of Gibbs L. Baker, general counsel of the Wholesale Coal Trade Association of New York. When several association members complained that during the last few weeks of December certain carriers failed to make proper settlement for confiscations, Mr. Baker was asked for an opinion. His decision in part, follows:

"The preliminary question to be first disposed of is whether the carriers in confiscating or diverting coal were acting pursuant to authority duly vested in them or whether the taking or diversion was duly authorized. With the termination of federal control on March 1, 1920, all right to exercise the broad powers provided in the Lever Act ceased to exist. There was no continuation or extension of the authority originally vested in the Railroad Administration to the respective carriers at the time of their release from federal control. The Lever Act was designed for the aid of and support of governmental agencies and cannot be held to support acts of confiscation or diversion by private concerns. It is, therefore, our opinion that any seizure by the railroads is entirely illegal and to be defended on no grounds whatsoever. The sole ground of necessity which, no doubt, has prompted the carriers to exercise the power of confiscation and diversion is not sufficient ground, we submit, for altering the common law rule as to the damages recoverable.

"Our opinion, therefore, briefly stated, is that where dealers enter into contracts for the delivery of coal at a definite fixed price and consign shipments of coal for delivery under the agreements previously entered into, the confiscation or diversion of such coal by the carriers constitutes a violation of property rights (indisputably protected by the Constitution of the United States) for which damages as evidenced by the contract price are properly recoverable."

**Coal Offered Shipping Board at Lower Prices.**

COAL IN ABUNDANCE, and at reduced prices, was offered on January 14 to the U. S. Shipping Board, which three weeks previously had rejected all of the bids submitted for the next year. The average price was \$7.50 per ton, or one dollar less than the previous bids, and the total offerings aggregated 15,250,000 tons, as against 2,000,000 offered at the first bidding. Fifty-four companies submitted eighty-seven bids.

**Bituminous Margin 71 Cents Per Ton.**

Bituminous sales prices, per net ton at the mines, averaged \$3.47 between January and October, 1920, according to returns of 494 companies made to and announced by the National Coal Association. The average cost per ton was \$2.76, leaving the producer a margin of seventy-one cents per ton, out of which he had to pay interest and taxes. The average margin of profit was about thirty-five cents per ton.

**SALT LAKE ASSAY OFFICE SAVED; DEADWOOD OFFICE LOST.**

NO APPROPRIATION for the assay office at Deadwood, S. D., was included in the Sundry Civil Appropriation Bill as it passed the House of Representatives, and it was only after a determined fight that any provision in behalf of the Salt Lake assay office was made.

The Appropriations Committee proposed to eliminate both offices but Western congressmen put up a strong defence. Committee members said the offices were established many years ago, were useless and should be abolished. During the session of the House as a Committee of the Whole, Representative Gandy, of South Dakota, was defeated, twenty-eight to thirty-five, in his efforts to have the Deadwood office provided for, but Representative Mays, of Utah, succeeded by a vote of ninety-six to ninety-two in retaining the Salt Lake office.

Mr. Gandy argued that the Deadwood office had served a useful purpose in the mining industry for twenty years when in 1914 reduced appropriations forced the mint service to notify the largest gold companies of the Black Hills district that it could no longer accept their bullion, since which time bullion has been sent to the Philadelphia mint. He said the Deadwood office had made more assays for ore, for gold and silver than any other office. It had received 179 deposits of bullion last year, which was remarkable in view of the situation confronting the gold mining industry. He said a great number of smaller gold mining companies were at a standstill or would be driven out of business if conditions did not change or relief come through some action by Congress.

Representative Wood, of Indiana, said that while the Treasury had not recommended abolition of the Deadwood office, it realized it was useless, and he referred to the elimination by Congress of sub-treasuries without recommendation from the Treasury Department. He said more gold was assayed in Alaska in a month than in South Dakota in a year and yet there was no assay office in Alaska. The same conditions applied to New Mexico and Arizona. He declared the office was operated at a loss to the government and there were other ways to get assays. Representative Raker opposed discontinuing the office, saying it and other assay offices had demonstrated that they were necessary.

Speaking for the Salt Lake office Representative Mays quoted the Director of the Mint to the effect that assay offices were of benefit to prospectors and developers. The director had stated that at present the mining industry is dormant owing to lack of prospectors bringing in new mining country and that there must be an incentive to the prospector to develop new territory. Mr. Mays said more ore was produced and smelted in Salt Lake County than anywhere else in the world, and that the miners and prospectors asked that the office be continued. He said that during the war Utah had paid \$100,000,000 into the Treasury, mostly from her mines. Since the establishment of the office fourteen years ago it had done valuable work and the state's output of minerals had increased four or five fold. He charged that the abolition of the office was an attempt to discourage the mining industry. He referred to the critical situation with reference to the gold standard. He said the assay offices which the committee had retained had fewer assays to their credit than those which it was proposed to abolish. He read a letter from the Salt Lake Commercial Club saying activities in mining were at a low ebb, that there was nothing of greater value to mining development than the assay office, and that the abolition of the Salt Lake Office would mean a great loss to prospectors and small miners as they could not send samples to San Francisco or Denver. Mr. Mays said an



ex-soldier had one sample assayed at Salt Lake which resulted in the development of a mine which netted the government \$250,000 in income taxes.

Mr. Mays also read a letter from the Utah Chapter of the American Mining Congress saying the assay office was of great service to prospectors and small operators; that there were no refineries at Salt Lake and no place except the assay office where small lots could be disposed of; that the office served Utah, Nevada and Idaho; that it made mineral tests for other government departments, such as assays of counterfeit coin for the secret service, tests for the land office, geological survey and forest service; and that the office gave a stimulus to much needed gold prospecting.

Mr. Mays said nineteen million acres of land were unsurveyed and unclassified as to mineral content and the Geological Survey was coming to the assay office continually for assays of ore samples to determine the character of the land.

Representative Wood said the Salt Lake office was more of a liability than the Deadwood office, that its importance was declining faster than Deadwood, and that both offices were created years ago without justification.

Notwithstanding the fact that the congressmen, in session as a Committee of the Whole, voted to retain the Salt Lake office, another effort to effect its elimination was made when the House voted on the appropriation measure. This was the only provision in the entire measure which was voted on again. The count was 152 to 124 in favor of retention of the appropriation for the office.

### PROSPEROUS YEAR FOR IRON ORE

**I**RON ORE MINED in the United States in 1920, exclusive of that containing more than 5.5 per cent of manganese, totalled 67,773,000 tons, or an increase of 12 per cent over the 1919 output. Shipments aggregated 69,558,000 gross tons valued at \$290,607,000, or an increase over 1919 of approximately 24 per cent in quantity and 43 per cent in value.

The year's production was exceeded in quantity only by that of 1916, 1917 and 1918 and was less than 2,000,000 tons below that of the latter. Shipments for 1920 exceeded gross production by approximately 1,785,000 tons, whereas in 1919 production had exceeded shipments by 4,147,000 tons.

This record, which is calculated from preliminary figures furnished the Geological Survey by producers of 97 per cent of the normal output, is considered altogether remarkable in view of obstacles placed in the path of producers during the year. Among the troubles of the year were the strike of dock ore handlers, railroad tie-ups due to strikes and fuel shortages, and the cessation of demand on account of the closing down of blast furnaces.

Lake Superior district producers led the country, furnishing 86 per cent of output and shipments. The district's shipments were approximately 24 per cent greater than 1919 and its output 12 per cent more than that of 1919. The increased value of ore shipped was 43 per cent. Minnesota mines furnished 67 per cent of the Lake Superior district's shipments and 58 per cent of the shipment of the entire country. Michigan mines furnished 31 per cent of Lake shipments and 27 per cent of the country's shipments.

Southeastern states, which include the Birmingham and Chattanooga districts and constitute the second largest iron ore producing area in the United States, increased their output 16 per cent, their shipments 18 per cent and their gross income from shipments 32 per cent over 1919.

Shipments from the Northeastern states exceeded production by 43,000 tons. Production and shipments were identical in the case of the Western states, and in other states shipments were approximately 1,800,000 tons greater than production.

Production for 1919 and 1920, and shipments and value of shipments in 1920, are shown in the following tables:

District	Ore mined (gross tons)	
	1919	1920
Lake Superior:		
Michigan.....	15,471,000	17,232,000
Minnesota.....	35,767,000	39,964,000
Wisconsin.....	888,000	977,000
	52,126,000	58,173,000
Southern States:		
Alabama.....	5,034,000	5,850,000
Georgia.....	80,000	89,000
North Carolina.....	67,000	69,000
Tennessee.....	271,000	347,000
Virginia.....	288,000	308,000
	5,740,000	6,663,000
Northwestern States:		
New Jersey.....	409,000	420,000
New York.....	558,000	927,000
Pennsylvania.....	547,000	680,000
	1,514,000	2,027,000
Western States:		
Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Washington, and Wyoming..	678,000	734,000
Other States:		
Connecticut, Maryland, Massachu- setts, Missouri, and Texas.....	108,000	176,000
Grand total.....	60,466,000	67,773,000

District	1920	
	Quantity (gross tons)	Value
Lake Superior:		
Michigan.....	18,715,000	\$83,628,000
Minnesota.....	40,274,000	169,654,000
Wisconsin.....	1,067,000	4,261,000
	60,056,000	\$257,543,000
Southern States:		
Alabama.....	5,769,000	17,903,000
Georgia.....	94,000	474,000
North Carolina.....	69,000	256,000
Tennessee.....	347,000	1,243,000
Virginia.....	296,000	1,118,000
	6,575,000	\$20,994,000
Northeastern States:		
New Jersey.....	417,000	2,592,000
New York.....	978,000	6,482,000
Pennsylvania.....	675,000	1,138,000
	2,070,000	\$10,212,000
Western States:		
Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Washington, and Wyoming..	734,000	1,344,000
Other States:		
Connecticut, Maryland, Massachu- setts, Missouri, and Texas.....	123,000	514,000
Grand total.....	69,558,000	\$290,607,000

### Labor Leaders Called To Discuss Legislative Matters

The American Federation of Labor has called a conference of representatives of 109 unions to be held in Washington February 23 to plan a campaign against wage reductions, anti-strike and compulsory arbitration laws and certain kinds of injunction measures. It is possible that they will also discuss the establishment of cooperative stores throughout the country, the stores to eventually handle all food, fuel and clothing necessities.

## HOUSE COMMITTEE DEALS RUTHLESSLY WITH BUDGET ESTIMATES

**F**UNDS FOR THE BUREAU OF MINES and other government departments in which the mining industry is concerned will be considerably less during the next fiscal year than the budgets prepared by the heads of departments call for, if the measure prepared by the House Committee on Appropriations is finally adopted. And the prospects are that the measure will be adopted with very few changes.

The budget of the Bureau of Mines was cut by the committee from \$3,469,638 to \$1,357,300—a reduction of \$2,112,338 over 1922 estimates and only \$54,658 over appropriations for the current year. Geological Survey estimates were cut from \$2,469,140 to \$1,605,620, which amount is \$125,080 less than appropriations for the current year and \$863,520 less than estimates. Reclamation Service estimates were cut from \$26,086,000 to \$20,277,000, which latter figure still amounts to \$11,803,000 more than current year appropriations, although \$5,809,000 less than 1922 estimates. The Appropriations Committee pointed out that the Reclamation Service would probably receive \$15,000,000 from oil and gas operations under the leasing law by July 1, 1922.

Bureau of Mines appropriations recommended by the committee are: General expense, \$76,900; mine explosion investigations, \$409,065; investigation of mineral fuels and unfinished mineral products, \$142,510; investigations of ores and mineral substances, \$125,000; petroleum and natural gas investigations, \$135,000; expenses of mining experiment stations, \$200,000; maintenance of buildings at Pittsburgh station, \$50,000; operation of mine rescue cars, \$160,000; inspections under the leasing bill, \$50,000, for which \$132,000 was estimated.

The committee declined to grant the following estimates; federal inspection of fuel, \$725,000; uniform selection in purchase of government fuel, \$75,000; Building for Fairbanks, Alaska, experiment station, \$75,000.

### NO MONEY FOR NEW INVESTIGATIONS

The budget item of \$725,000 for Federal inspection of fuel hit a healthy snag—the snag consisting of the committee's unexpected development of opposition to all appropriations for investigations not already authorized. Heretofore the Appropriations Committee has made liberal allowances for new work, but this year its members insist that all such projects must be first considered by the committee having jurisdiction. Under this state of affairs, federal inspection of fuel must first be considered and authorized by the Committee on Mines and mining. Another important outcome of this ruling is that in the future all such projects will be subject to public hearing, and the former practice of hearing government officials only, and in private, will go into the discard.

### MINTS AND ASSAY OFFICES

Detailed appropriations for mints and assay offices, as recommended by the Committee, are as follows: Denver mint—salaries, \$44,800, decrease of \$1,200 from this year and decrease of \$2,100 from estimates; wages of workmen, \$110,000, which is the same as the current appropriation and the estimate; incidental and continued expenses, \$90,000, which is the same as current appropriation and estimate; New Orleans mint—salaries, \$5,500, decrease, \$400; wages of workmen, \$6,250, no change; incidental expenses, \$2,000, decrease, \$650; Philadelphia mint—

salaries, \$68,600, decrease, \$4,600; wages of workmen, \$350,000, decrease of \$90,000; incidental expenses, \$140,000, decrease, \$37,000; San Francisco mint—salaries, \$48,400, decrease, \$7,200; wages of workmen, \$200,000, no change; incidental expenses, \$75,000, no change. Boise, Idaho, assay office—salaries, \$4,200, decrease, \$1,200; wages of workmen, \$2,000, and incidental expenses, \$1,300, no changes. Helena, Montana, assay office—salaries, \$4,400, decrease, \$1,000; wages of workmen, \$2,500, decrease, \$500, incidental expenses, \$1,600, no change. New York assay office—salaries, \$53,400, decrease, \$6,850; wages of workmen, \$145,200, decrease \$24,000; incidental expenses, \$115,500, decrease \$34,500. Seattle, Washington, assay office—salaries, \$11,450, decrease \$1,100; wages of workmen, \$15,000, decrease \$2,200; incidental expenses, \$5,700, decrease \$300.

### BUREAU OF STANDARDS

In the Bureau of Standards appropriation, \$15,000 for the investigation of standards of practice and methods of measurement of public utilities is made available for electrolysis investigations and an appropriation of \$15,000 for investigation of rails, wheels, axles and other railway equipment is consolidated with the appropriation for metallurgical research. For investigating structural materials, the same appropriation of \$125,000 is given, which is \$50,000 less than the estimates. An appropriation of \$100,000 for investigation of internal combustion engines was refused. For mine scale investigations, the same appropriation of \$15,000 is given, which is \$10,000 less than estimated. Clay product testing receives \$25,000, or \$10,000 less than estimated. Appropriations of \$20,000 for regulation of weights and measures and \$25,000 for physical constants of materials were refused, as was also an appropriation of \$15,000 for electro-deposition of metals. For metallurgical research \$40,000 is given, an increase of \$15,000 over the current year, but a decrease of \$30,000 from the estimates.

### INTERIOR INCREASES REJECTED

Representative Hayden of Arizona, proposed, but the House rejected, amendments to the Sundry Civil Appropriation Bill, increasing appropriations for the Public Land Service and Geological Survey, in the interest of the mineral development of the country. He argued that the mineral leasing law had increased the work of the Land Offices and it was necessary to give additional appropriations, in order that delays in issuing patents on lands might be overcome. He declared that under the Leasing Law the government had collected \$9,000,000 back royalties on oil and that another \$10,000,000 was affected in impounded oil and land withdrawals, the classification of which lands should be expedited.

The increased appropriations which Representative Hayden sought, but which the House refused, were as follows: Salaries of registers and receivers of land offices, from \$450,000 to \$475,000; contingent expenses of land offices, \$375,000 to \$425,000; topographic surveys, \$330,000 to \$345,000; Geologic Surveys, \$352,000 to \$400,000; gauging streams, \$180,000 to \$300,000.

### FUEL YARD ABANDONMENT URGED

Abolition of the government fuel yard in Washington, which supplies government departments in the national

capital with coal, was advocated by Representative Blanton of Texas, on the ground that it was a war agency whose continuance was no longer necessary. Chairman Good thought the fuel yard was paying its way and was successful in securing coal for the government cheaper than heretofore. It ought at least to save the dealers cost. He said, however, that the superintendent of the capitol building had stated that he could purchase coal more cheaply from outside sources than through the fuel yard. The Committee in its report recommended for the fuel yards the same appropriation as that of the current year.

Abolition of the office of Surveyor General of South Dakota was recommended by the committee.

The appropriation for salaries for the General Land Office was decreased \$20,000 from the current year and \$276,050 from the estimates.

Indian Office salaries were decreased \$27,000 from the current appropriation, and \$123,000 from the estimates.

The same salaries are provided in the committee report for the Patent Office as for the current year, but \$453,000 of the estimates are eliminated.

In the Interior Department, the following employees are eliminated; General Land Office, twenty; Indian Office, eighteen.

Appropriation for maintenance of sub-treasuries in nine cities are eliminated, as these offices will be abolished by June 30 under a former act of Congress.

In the Department of Labor, the Division of Information and twelve employees of the Bureau of Immigration are eliminated.

## H. FOSTER BAIN NOMINATED DIRECTOR OF BUREAU OF MINES

**H.** FOSTER BAIN OF CALIFORNIA has been nominated by President Wilson as director of the United States Bureau of Mines, succeeding Dr. F. G. Cottrell, who resigned at the end of the year and on the first day of 1921 took up active duties as chairman of the division of chemistry and chemical technology of the National Research Council. Dr. Cottrell recommended Mr. Bain as his successor, and the latter is filling the office as acting director pending action upon his nomination by the Senate.

All of Mr. Bain's very active life has been spent in mining work or in activities closely allied thereto. He was born at Seymour, Ind., and on November 2 last passed his forty-eighth birthday. He graduated from Moore's Hill College in 1890, attended Johns Hopkins University from 1891 to 1893 and took his Ph.D. degree from the University of Chicago in 1897.

Mr. Bain has served as a geologist both in the Iowa, Illinois, and United States geological surveys; as a lecturer in the universities of Iowa and Chicago; as an editor both in Europe and America, and as assistant to the director of the United States Bureau of Mines. His experience in mining covers operations in Colorado connected with the Consolidated Franklin Mines Company, of Idaho Springs, and the Cripple Creek Mining Company, operating the Hull City placer in Teller County. Mr. Bain served in various positions, from shift boss to assistant superintendent, and in the case of the smaller property as manager. At the same time he made mine examinations in various parts of the West for a group of Iowa bankers, and in the South for some New York and Missouri people. His southern work included acting in a consulting capacity in the purchase and development of properties in the Joplin zinc fields and in the phosphate fields of Tennessee.

Later, as editor of the Mining and Scientific Press, he had occasion to visit nearly all of the larger mining districts of the West, including a number in Alaska, Canada

and Mexico. While connected with the Mining Magazine, in London, he studied the tin mines of Cornwall and the principal mining districts of South Africa, including the Portuguese Territories and the Katanga district of the Belgian Congo.

For the last four years his work has been mainly in the Far East, extending from Siberia to India, and included exploration, examination and consultation on development. He served as Assistant Director of the Bureau of Mines during the war period.

Mr. Bain was for some years an active member of the American Mining Congress, chairman of various committees and for a period one of the directors. He is a fellow of the Geological Society of America and a member of the American Institute of Mining Engineers, Mining and Metallurgical Society of America, Canadian Mining Institute and the Institute of Mining and Metallurgy.

Dr. Cottrell had planned to resign as assistant director of the Bureau of Mines last June and to take the position he now occupies, but was prevailed upon by Secretary of the Interior Payne when Director Manning resigned to take the directorship until an available successor could be found.

## Barytes Producers Urge Tariff

C. P. DeLore, representing the Missouri Barytes Lithopone Association, before the House Committee on Ways and Means said that deposits of crude barytes ore in the United States exceeded those of Germany. He favored a duty on crude and ground barytes in order to meet German competition.

E. A. Stocking of the same association said miners' wages in this industry were \$5.60 per ton as against \$1.80 per ton before the war. He estimated there were 160,000 acres in Washington County, Missouri, containing this ore and in addition other areas in the state. The ore was also to be found in Connecticut, Maryland, Virginia, the Carolinas, Alabama, Georgia, Kentucky, Tennessee, Illinois, Texas, New Mexico, Wisconsin, Arizona, California, Utah, Nevada, and Idaho. He said that in Missouri the ore was mined with pick and shovel because there had been no stability to the industry to encourage modern methods, but that if a sufficient protective tariff should be established modern mining methods would be introduced.

W. S. Peebles of Cartersville, Georgia, representing commercial miners of barytes, said the development of barytes deposits in Georgia progressed with great speed when German imports were stopped by the war. There are now eleven active producing operators in his district who ship their product to eastern manufacturers.

## Osage Bonus Distribution Authorized

THE COURT OF APPEALS of the District of Columbia has rendered a decision authorizing the distribution of \$33,000,100 of accumulated bonuses on the sale of oil lands of the Osage Indians to the parents and minor children of the tribe. The suit was brought by W. T. and Louisa Mosier, parents of Indian children, for a mandamus to compel Secretary of the Interior Payne to pay over funds due the children. The Department of the Interior asserted by way of defence that the funds were bonuses and not royalties, and that unlimited payments without accounting to the Indian Commissioner might lead to the squandering of the property of the minor children. It is probable that the Court of Appeals' decision against the Interior Secretary will be appealed to the United States Supreme Court.



### LEAD AND ZINC PRODUCTION SHOWS HEAVY INCREASES

**T**HE YEAR 1920 saw great increases in both the mine output of lead and zinc and the refinery output of lead, and the smelter output of zinc/ell but a little short of that of 1918, according to figures of C. E. Siebenthal, of the Geological Survey.

The soft lead output by mines of the Mississippi Valley and the eastern states was about 275,000 short tons, and the output of argentiferous lead by mines of the western states was approximately 236,000 tons, a total of 511,000 tons. The output during 1919 was 237,000, 206,000 and 443,000 tons, respectively, and that of 1918 was 264,184, 314,470 and 581,654 tons, respectively. The increase for 1920 was 68,000 tons, whereas 1919 has sustained a decrease of 138,500 tons. Southeastern Missouri led all other districts in production, with 183,000 tons, as compared with 157,158 tons during 1919. The Cour d'Alene district of Idaho ranked second, with 121,000 tons, as compared with 83,833 tons in 1919. The Utah output was 67,000 tons, as compared with 61,915 tons during 1919.

Imports of lead in ore approximated 15,000 tons and in bullion 49,000 tons, a total of 64,000 tons as compared with 65,799 tons during the preceding year. Mexico provided 54,000 tons, and Canada 4,000, of the 1920 imports.

Lead content of lead ore in bonded warehouses at the end of November, 1920, was 16,187 tons and of base bullion 32,671 tons, part of which may have been smelted or refined but not shipped.

Recoverable zinc content of ore mined in 1920 was 597,000 tons, as compared with 557,000 tons in 1919 and 632,243 tons in 1918. Output of eastern states was 102,000 tons, of the central states 343,000 tons and of the western states 152,000 tons, as compared with 122,000, 305,000 and 130,000 tons, respectively, in 1919.

Imports of zinc in ore, which totaled 17,009 tons in 1919, aggregated 23,000 tons in 1920. Zinc content of Mexican ore importations in 1920 amounted to 16,000 tons, as compared with 11,225 tons during the preceding year. Australia sent ore containing 3,852 tons of zinc, while Canada and other countries sent smaller quantities.

The zinc content of zinc ore in bonded warehouses on November 30, 1920, was 25,642 tons, some of which may have been smelted but not shipped.

Production of primary domestic desilverized lead in 1920 was about 215,000 tons, of soft lead about 189,000 tons and of desilverized soft lead about 70,000 tons, giving a total of 474,000 tons of refined lead. The output in 1919 was 424,433.

Output of lead smelted and refined from foreign ore and bullion was 64,000 tons, as against 57,787 tons the preceding year. The total of lead smelted or refined in the United States during 1920 was approximately 538,000 tons, as compared with 482,220 tons in 1919.

Production of primary metallic zinc from domestic ores in 1920 was about 449,000 tons and from foreign ores approximately 14,000 tons, or a total of 463,000 tons as compared with a total of 465,743 tons in 1919. Of the 1920 domestic output about 51,000 tons consisted of electrolytic zinc, as compared with 27,056 tons in 1919. In addition to primary zinc there was an output of about 20,000 tons of redistilled secondary zinc, as compared with 19,748 tons in 1919. The total supply of distilled zinc and electrolytic zinc in 1920 was thus 483,000 tons, of which 81,000 tons was high grade, 34,000 tons intermediate, 51,000 tons select and brass special and 317,000 tons prime western. Of the total 1920 primary zinc output, Illinois made about 111,000 tons, as compared with 118,340 in 1919; Kansas 42,000 tons, as compared with 43,942 in 1919; Oklahoma 110,000 tons, as against 121,988 tons in 1919; Arkansas 30,000 tons, as against 31,437 dur-

ing the preceding year, and Pennsylvania 74,000 tons, as compared with 67,521 tons in 1919.

Exports of zinc made from foreign ores totaled approximately 28,500 tons, and exports made from domestic ores about 86,000 tons, as compared with exports of 16,789 tons and 129,508 tons, respectively, in 1919. Exports of domestic included 12,000 tons of sheet, as against 19,762 tons in 1919.

Stocks of zinc at smelters and warehouses at the end of November approximated 61,500 tons, as compared with 36,793 tons at the end of 1919. Apparent consumption of primary zinc during 1920 was 324,000 tons, as compared with 323,964 tons in 1919 and 423,792 tons in 1918.

### DROP IN YEAR'S COPPER OUTPUT

Smelter production from domestic ores during 1920 was estimated by H. A. C. Jensen, of the United States Geological Survey, at 1,235,000,000 pounds as against 1,286,000,000 pounds in 1919. Production of refined from foreign and domestic ores was 1,573,000,000 pounds, or 195,000,000 pounds less than 1919. Apparent domestic consumption was 910,000,000 pounds as compared with 877,000,000 pounds in 1919. Stocks of raw and refined at the end of the year aggregated 874,000,000 pounds, a decrease of 30,000,000 pounds from those at the end of 1919. Imports of raw and refined copper for ten months ending October 30, 1920, amounted to 407,437,515 pounds, according to calculations of the Bureau of Foreign and Domestic Commerce. For the same period exports aggregated 543,695,851 pounds, as against 516,627,775 for the whole year 1919.

"The continued decreased production, the large stocks and the low domestic consumption were due entirely to the generally depressed condition of industry throughout the world, which did not permit the absorption of as great quantities of copper as had been hoped for," Mr. Jensen stated in making his preliminary report and estimates. "Low exchange and the great stocks of scrap and secondary copper available both in the United States and abroad also decreased the demand for new copper."

"The salient features of the copper industry during 1920 were a small hesitating demand, decreased production, continued small imports, particularly during the last half of the year, and labor troubles."

### Quicksilver Production Declines

**FROM JULY 1 TO SEPTEMBER 30, 1920, 2,045** flasks of quicksilver of seventy-five pounds net were produced in the United States according to Geological Survey figures. This is 1,640 flasks less than was produced in the second quarter of 1920. Total production of the first three quarters of 1920 was 10,629 flasks. If final figures show that production continued to decline during the remainder of the year, the total for 1920 will be less than 12,000 flasks, or 9,000 flasks less than for 1919. Stocks unsold at the end of the third quarter amounted to 3,845 flasks. Nine mines in California, one in Nevada and two in Texas were the only ones reported as producing in the third quarter. California produced 1,356 flasks, Texas 615, and Nevada 74. The average monthly price per flask in San Francisco was \$88 in July, \$85 in August, and \$75 in September. The average price for the quarter was \$82.66 as compared with \$91 during the second quarter, the decline being apparently due to diminished demand, to the return to the domestic market of stocks previously sold abroad and the offering for sale of surplus stocks. Depression of the market resulted in the idleness after the third quarter of two of the most productive mines.



# THE OIL SHALE INDUSTRY IN 1920

A REVIEW OF A FORTHCOMING TREATISE by DR. VICTOR C. ALDERSON,  
*President Colorado School of Mines.*

THE MOST IMPORTANT EVENT IN 1920, in so far as the oil industry is concerned, was the issuance of a patent to oil shale land by the United States government. This is the view taken by Dr. Victor C. Alderson, president of the Colorado School of Mines, and one of the world's recognized authorities on this subject. Dr. Alderson, who only recently returned from a European trip made for the purpose of shale investigation, has written a brief, but exhaustive, treatise on "The Oil Shale Industry in 1920," which will soon be issued as a publication of the educational institution over which he presides. A review of this treatise, advance proofs of which have been submitted to the Mining Congress Journal, is herewith given.

Dr. Alderson reviews the shale situation in Scotland and England particularly, and in other foreign countries generally, as a prelude to discussing the status and outlook of the industry in America at length. He regards the last year as one in which no spectacular results have been attained, but a year in which substantial and far reaching fundamental progress has been made.

Oil shale has been developed commercially in Scotland since 1850. The Scotch retort, however, which is a vertical two-chambered retort in which oil is produced in the upper and ammonia in the lower chamber, is not adapted, without modifications, to most American shales. In fact, Dr. Alderson points out that the only American deposits to which it is adapted—and even its use there would require modifications—is the oil shale deposit at Clay City, Kentucky.

Deposits of England are extensive, but most exposed in Norfolk County and on the English Channel. Both these deposits contain from five to eight per cent of sulphur, which makes the resultant oil objectionable and unsaleable. Removal of the sulphur without destroying the oil is held to be the serious technical problem before the English scientist, but as yet the ablest English chemists have found no solution.

Oil shales occur at Autun, Allier, the Midi, the Central plateau and in the Vandee, in France. Four of the ten seams at Autun have been worked, and the average yield is eighteen gallons of oil and from twenty-five to thirty pounds of ammonium sulphate. The Scotch method is followed.

Illuminating reference is made in the Alderson treatise to the extent of shale deposits and shale developments in Norway, Chile, Argentina, Finland, Canada, Tasmania, Australia and Brazil. The most interesting portion, of course, refers to the United States, and from this part of Dr. Alderson's article the following is reproduced verbatim:

## DEVELOPMENTS IN THE UNITED STATES

Little has been published about the oil shale deposits of California yet they are extensive and valuable. It is reported that in Kern county an area of twenty-five square miles have been sampled and found to yield an average of 52 gallons of oil to the ton. At Elsinore, near Riverside, test pits show 15 feet of shale which yield from 58 to 62 gallons of oil. At the Shuman cut on the Southern Pacific, three miles north of Casmalia and ten miles from Santa Maria, a 250 foot face of oil shale is exposed on the west side of the cut. On the east side a hill 900 feet high is virtually all shale with a small overburden of soil. On the eastern edge of this hill an oil well sunk to 2,000 feet showed a continuous body of oil shale. The deposit has been sampled from surface exposures and by drill holes and shows an average from 30 to 35 gallons of oil to the ton. A sample tested at the Colorado School of Mines gave 32 gallons. The economic advantages of this deposit—cheap open cut mining, nearness to

transportation, and to market—gives it a distinct advantage as a commercial project. The United States Producers Refining Company owns 1,000 acres of this ground. The President, E. W. Hartman, has designed a retort, the first 50 ton unit of which is now being installed and is expected to be in operation by February 1. No effort will be made to produce by-products. A skimming plant only will be erected. Mr. Hartman estimates that with a plant of 5,000 tons daily capacity, which he contemplates, he can mine and retort the shale for 65 cents a barrel and that the marketable product will be 20 gallons of gasoline, 3 gallons of distillate, and 2 gallons of coal oil to the ton of shale.

In Nevada the deposit seven miles from Carlin has been traced for a distance of 700 feet. Four veins are exposed, two five feet thick, one ten feet thick, and one 30 feet thick. The dip is 40°. An inclined shaft has been sunk on the 30 foot vein for a distance of 76 feet. The Nevada Shale Oil and Fuel Company, of Elko, Nevada, owns 320 acres of this ground.

At Elko, Nevada, the Catlin plant is on a commercially productive basis with a daily output of 100 barrels of crude oil. The mine has been opened by an inclined shaft 400 feet long, with drifts 100 feet apart, each approximately 400 feet long. No apparent change in the character of the shale has been noted. The cost of mining, as nearly as can be estimated now, is \$1.25 a ton. The plant is a complete unit with retort, condensers, two 300-barrel stills, sweating, and refrigerating plant. The marketable products are gasoline, distillate, lubricating oil, and paraffin wax. Enough gas is produced from the raw shale in the retort, added to the gas made from the spent shale in a detached gas producer, to supply power needs of the entire plant. Experimental work has been going on for the past four years. Fifteen thousand gallons of crude oil have been produced and 4,500 gallons put through the stills. The product will not be put on the market until a commercial stock has been accumulated. To Mr. R. M. Catlin, Franklin Furnace, New Jersey, who alone has financed this undertaking and has done the experimental work, together with W. L. Scheeler, the superintendent, belongs the credit of operating the first commercially productive oil shale plant in the United States.

In Utah the Western Shale Oil Company erected a ten ton plant of the Galloupe type, was producing regularly, and had contracted with the Apex Refining Company for the delivery of oil. A fire, however, interfered with operation. Four additional units of ten ton capacity each are under construction and are expected to be completed by February 1. This will be increased to 100 tons by March 1. The company estimates that the total cost of production of oil in this plant will be \$1.25 a barrel.

The black Devonian shales in Kentucky more nearly resemble the Scotch shale than any other deposit now known in the United States. The process for their treatment, as worked out at the Detroit Testing Laboratories, for the Devon Oil Shale Products Company, consists of a modified Scotch process. An analysis of the shale gave oil per ton, 22.7 gallons; gas per ton, 4,167 cu. ft.; ammonium sulphate per ton, 97.8 pounds; potash as K<sub>2</sub>O per ton of spent shale, 58.8 pounds. The company is now erecting a complete plant at Clay City, Kentucky. The first unit will be of 50 tons daily capacity to be increased ultimately to 1,500 tons. The cost of mining and retorting is estimated at \$1.04 a ton. At Petersburg, Va., six full sized retorts of the Wallace type are under construction.

In Colorado activity has been pronounced especially in and about Grand Valley and Debeque. At Grand Valley the Grand Valley Oil and Shale Company is erecting a Stalman retort and a Wells Refining plant on their property in Starkey gulch six miles north of town. The company is also erecting a testing and research laboratory in the town of Grand Valley. The Union Oil Company of California and the Midwest Oil Company have both secured extensive acreage. The Schuyler-Doyle interests are erecting a Taff retort in Wheeler gulch. At Debeque the W. P. Hammon interests have acquired approximately 10,000 acres, are engaged in diamond drilling the ground and are planning to erect a plant. The Lackawanna Company is erecting a Randall retort, the Mount Blaine Brown retort and the Monarch Company a Ginot retort. The Mount Logan Company is operating a Simplex retort. In Rio Blanco county the Continental Oil Shale Company has a 50 ton plant ready for operation in the spring. In Denver L. F. Chew, of the National Oil Shale Company, has erected a commercial sized vertical retort and is doing experimental work on both retorting and refining. J. McD. Johns, of the Industrial Process Company, of St. Louis, has put up a full sized inclined retort, the peculiar feature of which is that the shale is reduced to a very fine size; a part of this powdered shale is used as fuel to heat the retort and the rest is put through the retort and yields gas and oil.

## COST OF OIL SHALE LAND

The cost of oil shale land in Kentucky, during the past year, has increased from \$25.00 to \$112.50 an acre. In Nevada and California large tracts of undeveloped ground have been secured at a few dollars an acre. In Colorado and Utah the value of shale land varies greatly, according to location and natural advantages. It is fairly safe to say, from general observation and some known sales, that during the past year the selling price has on an average increased one hundred per cent.

## RESEARCH AND EXPERIMENTAL WORK

It would be impossible, within the limits of this paper to describe in detail the experimental and research work of the past year, even if it were worth while. The amount of work being done is so great and the number of investigators so numerous, scattered, and interested only in their own special problems, that the task of collecting, coordinating, and analyzing the individual results is virtually impossible. The problem remains the same, however; first, to perfect a retort of large capacity, fool proof in its operation, constructed on correct scientific principles, that will produce the maximum amount of good oil; second, to refine crude shale oil, not into a long list of hypothetical by-products, but into a few products for which there is a ready market; and, third, to coordinate the various processes so that the marketable products can be sold at a profit.

As usual, governmental and state research work lags behind private enterprise. Private interests are now employing their own chemists and technical men to make their investigations. The U. S. Bureau of Mines is doing creditable work as far as its resources will allow. At the Colorado School of Mines resources are limited, but the interest is so keen that individual efforts by Professors Low, Roberts, and Franks of the chemistry department, and Messrs. Keeney and Williams of the metallurgical research department, have resulted in scientific information and technical publications of permanent value to the industry. This has been carried to such an extent that even with its scant financial resources the Colorado School of Mines has attained an international reputation as a center of oil shale research and information.

## GENERAL OBSERVATIONS

A retrospect of 1920 shows an interest in the oil shale industry exceedingly gratifying to those pioneers of the industry whose interest was first awakened by the bulletins of the U. S. G. Survey in 1913 and 14. A spirit of pessimism—the result of ignorance or ulterior motives—has been succeeded by a spirit of optimism. The organization of the Oil Shale section of the American Mining Congress has given formal recognition to the industry. The program of the Independent Oil Men's Association at Denver recognized the industry and many oil shale exhibits were installed. At the meeting of the American Mining Congress in Denver the Oil Shale convention, the working oil shale laboratory exhibit of the Colorado School of Mines, and the comprehensive exhibit of the Petroleum Engineering Company of Kansas City were notable features.

## SHALE MEN'S ASSOCIATION ELECTS

J. B. JENSON of Salt Lake City has been elected president of the American Shale Men's Association, an organization which was formed at the 1920 convention of the American Mining Congress. R. C. Locke of DeBeque, Colorado, has been made secretary and Miss Irma Jenson of Salt Lake City, assistant secretary. One of the purposes of the organization will be to encourage the shale industry generally by preparing reliable data pertaining to property, processes, and titles and to disseminate information which will be of benefit to members and accrue to the advancement of the industry.

## Oil Permits on Power Sites

THE FEDERAL POWER COMMISSION has rendered the following decision concerning oil and gas prospecting permits on lands within power site reserves:

"As to permits to prospect for oil and gas on lands within power site reserves, the authority of the Commission is limited to making the determination prescribed by section 24 of the Federal Water Power Act as to what lands within such reserves may be disposed of, subject to the power reservation, and that the Commission is authorized to find, if such be the fact, that the opening of these lands to limited disposal in the form of prospecting permits and leases, under the oil leasing act, but for no other purpose, would not injure or destroy the value of the lands for purposes of power development; and certify such finding to the Secretary of the Interior."

EQUAL RIGHTS FOR AMERICANS IN  
WORLD OIL FIELDS URGED

SENATOR K. D. McKELLAR, of Tennessee, declared in the Senate that the United States should conserve its oil supply by prohibiting development of oil in this country by foreign countries unless they granted equal privileges to Americans.

"Other nations are using our oil without let or hindrance and some are prohibiting our citizens from using their oil resources," he said. "The demand for oil by our navy, merchant marine, railroads, commercial, industrial and business activity has become so great that it can hardly be supplied. Seventy per cent of oil used comes from the United States and Mexico. Our supply is being rapidly exhausted while that of other nations is little interfered with."

The Senator quoted statistics of the Geological Survey showing the oil resources of the world amounted to 43,055,000,000 barrels, of which the United States has seven billion barrels. He said Great Britain has under control oil resources amounting to 11,325,000,000 barrels in Canada, Egypt, Persia, Mesopotamia, India and the East Indies and in addition owns a tremendous interest in Mexico, the United States, Germany, Russia, China, and the East and West Indies. He estimated England controlled nearly half of the world's oil resources.

Senator McKellar asserted that since the war England through her government and citizens has been taking steps to secure as large a part of the oil supply of the world as possible, and has gone into the oil business; obtained large grants in Persia; taken over mandatories containing oil fields; has organized companies in England and has prohibited the citizens of other countries from acquiring oil rights in any lands over which she has control.

"Our government should likewise take steps to guarantee our future supply," the Senator continued. "Our citizens should have the right to acquire oil lands and produce oil wherever it may be found, and if they are not given these rights, we should shut off from our supply the governments and their citizens refusing to give us those rights."

The Senator said that from 1887 to 1918 the United States had produced 4,608,571,719 barrels of 42 gallons each of oil, or 61.42 per cent of the world's production of 7,503,147,138 barrels. He said our supply of oil would be gone in fifteen or thirty years at the latest.

The Senator pointed out that while England paid from \$1.75 to \$2.50 per barrel for fuel oil at Atlantic and Gulf ports and \$1.20 to \$2.50 at Pacific ports, oil produced by British companies in Persia and other foreign countries is sold to the American Navy, Shipping Board and ship owners at from \$7 to \$12 per barrel. He declared that England gets 80 per cent of her gasoline from the United States and that if it was not for American oil fields and Mexico, England could not run a ship.

All of the two Americas, Northern Europe and Northern Asia with the exception of Japan is open to oil prospectors of America, but all the British fields are closed to America.

## Semi-Annual Gasoline Survey

Gasoline being sold this year is similar in quality to that marketed last year, judged by conditions disclosed in the semi-annual survey of motor fluids now being conducted by the Bureau of Mines. So far, results are known only for the Pittsburgh district, but the survey will be extended to include San Francisco, Salt Lake City, New Orleans, St. Louis, Chicago, Cincinnati, Washington and New York.

### 258,000 PRODUCING OIL WELLS IN UNITED STATES.

ON OCTOBER 31, 1920, according to figures recently announced by the Geological Survey, there were 258,000 producing oil wells in the United States with an approximate production of 4.98 barrels per well per day. The figures for California were reported to the Survey by the Standard Oil Company and the Independent Producers Agency, and those for states east of California by the pipe line companies. The figures in many instances are approximated, because some of the pipe line companies do not maintain lists of wells with which their lines are connected, and the Survey in estimating the number of wells in such instances calculates on the basis of production per well per day. The Geological Survey figures follow:

PRODUCING OIL WELLS IN THE UNITED STATES OCT. 31, 1920.

State.	Approximate number of producing oil wells.	Approximate production per well per day.
		bbls.
California.....	9,490	32.3
Colorado.....	70	4.1
Illinois.....	16,800	1.7
Indiana.....	2,400	1.1
Kansas.....	15,700	7.4
Kentucky.....	7,800	3.2
Louisiana:		
Northern.....	2,560	31.7
Coastal.....	140	34.6
Total Louisiana.....	2,700	31.8
New York.....	14,040	0.2
Ohio:		
Central and Eastern.....	18,500	0.8
Northwestern.....	21,100	0.3
Total Ohio.....	39,600	0.5
Oklahoma.....	50,700	6.0
Pennsylvania.....	67,700	0.3
Texas:		
Central & Northern.....	9,400	22.9
Coastal.....	1,700	49.7
Total Texas.....	11,100	27.0
West Virginia.....	19,500	1.1
Wyoming & Montana.....	1,000	55.9
Total.....	258,000	4.98

### WYOMING LEADS ROCKY MOUNTAIN STATES IN OUTPUT OF OIL.

WYOMING IS THE MOST IMPORTANT crude oil producing state in the entire Rocky Mountain region, according to the Federal Trade Commission, which has sent to Congress a report on production and marketing for the state. The report shows that there is greater concentration in the control of oil production in this region than in any other field in the country.

The annual production of Wyoming first became important in 1912, when the output was about 1,570,000 barrels. In 1919 the output was nearly 13,630,000 barrels, and during the year just closed it jumped to approximately 17,000,000 barrels. This production was far greater than that of any other state in the region.

The Trade Commission informs Congress that Midwest refining interests are under control of the Standard Oil Company of Indiana, which together with other Standard Oil companies controls the bulk of the crude oil produced in the state. The control has been obtained through long time contracts which expire January 1, 1934. The Ohio Oil Company, a Standard company, has the largest owned production in the state, and in addition controls considerable quantities through working agreements. From 1917 to 1919 the Midwest interests controlled from 65 to 69 per cent of the state's production; the admitted Standard interests controlled from 27 to 29 per cent, and the two combined controlled from 93 to 97 per cent of the total output. The report says the Midwest Refining Company and the Illinois Pipe Line Company, both controlled by the Standard, operate practically all pipe lines and transport nearly all the oil marketed in Wyoming. The rates of the Illinois Pipe Line Company are said to compare favorably in cheapness with pipe line rates in other fields.

### Navy Would Continue Commandeering Of Coal and Fuel Oil.

SECRETARY OF THE NAVY Josephus Daniels, in a letter sent to Congress opposing repeal of the Lever Food and Fuel Control Act, a bill for which has passed the House, recommended in the event of repeal the enactment of a measure authorizing the navy to continue commandeering coal and fuel oil until June 30, 1922. The Secretary said that under commandeering orders the navy saved \$10,141,313 from June 1, 1917 to December 31, 1920, of which \$6,775,190 was saved on the purchase of 9,454,348 tons of coal and \$3,366,123 on the purchase of 17,703,749 barrels of fuel oil.

### Satisfactory Year for Magnesite.

MAGNESITE PRODUCTION in 1920 was greater than that of any previous year except 1917. Production of crude magnesite in Washington, according to the Geological Survey, was about 235,000 short tons as compared with 106,200 tons in 1919. Practically all of this output was dead-burned and sold as refractory material to steel companies and manufacturers of refractory products east of Chicago. The California output was approximately 60,000 tons, the exact figures not being available.

The total output for the United States was between 275,000 and 300,000 tons. Imports between January 1 to September 30, 1920, amounted to 20,730 tons of crude and 10,439 tons of calcined as compared with 6,381 tons of crude and 9,471 tons of calcined during the year preceding. Estimated as crude magnesite the imports first nine months of 1920 were about 41,600 tons as compared with 25,300 tons in 1919. Imports for the entire year will probably be shown when complete figures are available to have amounted to 50,000 tons of crude, or double those of 1919.

An investigation of the relations of time, temperature and size of particles in the decomposition of magnesite was made during the year by the Bureau of Mines in cooperation with Northwest Magnesite Co. at the mining experiment station at Berkeley, Calif. An electrically heated rotary furnace was used for these experiments in calcination, and the samples of crude magnesite used were obtained from mines in California and Washington.

Experiments with magnesite from Washington that has been used exclusively as refractory material are said to show that it is suitable also for use as plastic material, and preparations are being made to calcine it at the mines near Valley, Washington, for use in cement.



# GOLD AND SILVER PRODUCTION, IMPORTS AND EXPORTS FOR 1920

**G**OLD PRODUCTION in 1920 amounted to \$49,-509,400, or \$10,824,000 less than in 1919, and that of silver to 56,564,504 fine ounces, or 117,941 ounces less, according to figures announced by the Bureau of the Mint. Silver values were calculated upon the basis of \$1.01513 per fine ounce from January 1 to 17, 1920, and thereafter during the remainder of the year upon the basis of \$1.00 per ounce, as provided by the Pittman Act. Production by states during 1920 is shown in the following table:

GOLD		
State or Territory	Fine ounces	Value
Alaska.....	380,034	\$7,856,000
Alabama.....	10	200
Arizona.....	239,118	4,943,000
California.....	692,019	14,305,300
Colorado.....	368,298	7,613,400
Georgia.....	53	1,100
Idaho.....	22,509	465,300
Illinois.....	0	0
Michigan.....	0	0
Missouri.....	19	400
Montana.....	88,971	1,839,200
Nevada.....	171,968	3,554,900
New Mexico.....	22,417	463,400
North Carolina.....	53	1,100
Oregon.....	46,687	965,100
South Carolina.....	14	300
South Dakota.....	203,243	4,201,400
Tennessee.....	280	5,800
Texas.....	5	100
Utah.....	100,446	2,076,400
Washington.....	7,198	148,800
Wyoming.....	10	200
Philippines.....	51,568	1,066,000
Porto Rico.....	97	2,000
	2,395,017	49,509,400
SILVER.		
	Fine ounces	Value
Alaska.....	792,751	\$ 804,745
Alabama.....	5	5
Arizona.....	6,098,251	6,190,518
California.....	1,513,495	1,536,394
Colorado.....	5,572,407	5,656,718
Georgia.....	140	142
Idaho.....	7,531,253	7,645,201
Illinois.....	8,500	8,629
Michigan.....	510,601	518,326
Missouri.....	123,219	125,083
Montana.....	13,583,164	13,788,677
Nevada.....	7,392,689	7,504,540
New Mexico.....	764,586	776,154
North Carolina.....	11	11
Oregon.....	182,558	185,320
South Carolina.....	0	0
South Dakota.....	84,351	85,627
Tennessee.....	112,595	114,299
Texas.....	524,212	532,143
Utah.....	11,564,155	11,739,121
Washington.....	183,437	186,213
Wyoming.....	72	73
Philippines.....	21,917	22,249
Porto Rico.....	135	137
	56,564,504	57,420,325

## Federal Reserve Board's Figures.

Gold imports during the calendar year 1920 totaled \$428,700,000, as shown by Federal Reserve figures, and compared with \$76,500,000 in 1919. Gold exports aggregated \$322,100,000 as compared with \$368,200,000 in 1919. There was a gain through net imports of \$106,600,000 in the national gold stock as compared with a loss of \$291,700,000 through net exports in 1919.

The Federal Reserve report states that:

"Gold imports are shown inclusive of \$108,500,000 of gold formerly held earmarked for account of the Federal Reserve Banks by the Bank of England and returned late in the year to this country. This amount, while increasing the stock of gold of the United States, does not affect the total gold reserves of the Federal Reserve Banks, since gold held by foreign agencies is counted by the Reserve Banks as part of their reserves. Practically no change for the year is shown in the gold reserves of the Reserve Banks."

Of the year's total gold imports, \$274,900,000, or more than 64 per cent, came from Great Britain; \$48,700,000, or more than 10 per cent, from France; \$34,200,000, or eight per cent, from Canada; \$30,200,000, or about seven per cent, from Hongkong. Smaller amounts came from Colombia, Mexico, the Dutch East Indies and Peru.

Nearly 60 per cent of the year's gold exports were consigned to Asia. More than 30 per cent, or \$101,300,000, went to Japan alone. The principal other Asiatic recipients were Hongkong, China and the Dutch East Indies. Argentina stood next to Japan, receiving about \$90,000,000 or 27 per cent, of all American gold exports. Most of this amount represented shipments of the metal held since the war by the Federal Reserve banks for the account of the Argentine government, while a smaller portion apparently is composed of receipts from Europe, principally Great Britain, and reconsigned to Argentina. During the year Mexico received from the United States \$18,200,000; Uruguay, \$12,900,000, and Canada, \$5,600,000.

Silver imports during the year aggregated \$88,100,000, as compared with \$89,400,000 during 1919. Exports aggregated \$113,600,000 as against \$239,000,000 in 1919. Net silver exports for the year were \$25,600,000, as compared with \$149,600,000 in 1919. More than 60 per cent of silver importations came from Mexico. Peru, which sent nearly \$12,000,000, ranked second. Considerable amounts were also brought in from Canada, Chile, the Dutch East Indies and China. More than 84 per cent of all silver exports was consigned to the Far East. Of this amount, more than half went to China. British India, which during 1919 received more than 45 per cent of America's silver exports, received only small amounts in 1920. Silver exports to Great Britain during 1920 aggregated \$4,900,000. More than \$7,000,000 went to Canada and \$3,200,000 to Mexico.

## No Gold Coined During Year.

COINAGE DURING 1920 totalled 64,876,000 pieces of a value of \$4,534,400. The coins consisted of 2,386,000 half dollars, 5,448,000 quarter dollars, 13,990,000 dimes, 3,747,000 five-cent pieces and 39,305,000 one-cent pieces. No gold was coined during the year.

Coinage for other governments consisted of 5,050,000 nickel pieces for Cuba, 3,080,000 nickel pieces for Peru, 2,315,000 nickel pieces for Colombia and 1,500,000 bronze pieces for Indo-China.

The Director of the Mint purchased 29,817,361 ounces of silver under the Pittman Law during the year.





# NATIONAL LEGISLATION

**A**T THIS WRITING, January 19, there have been introduced in the final session of the Sixty-sixth Congress 1332 bills in the House and 4874 bills in the Senate, making a total of 6206.

Much legislation of importance to the mining industry has come up for action during the current month.

The Calder Committee, which has been considering legislation concerning the coal industry, presented its bill for price fixing and regulation of the industry. The tendency is to rush the bill through Congress. It is now before the Committee on Manufactures and it has been decided to limit the hearings on the measure to three days, January 18, 19, and 20.

Representative Newton of Minnesota introduced a bill authorizing the Federal Trade Commission to report to the House the tonnage of anthracite and bituminous coal purchased by the Government in the United States during 1919 and 1920.

The Ways and Means Committee of the House held hearings January 12, 13, and 14 on the tariff question. Representatives of the mining industry appeared on January 12 and 13. The American Mining Congress has issued a series of bulletins covering these hearings which it will be glad to furnish to those interested.

Lead and zinc producers, metal producers, pyrites, and chemical products were recommended for inclusion in the tariff schedule. The lead and zinc interests also appeared before the Senate Finance Committee and urged emergency tariff legislation.

Senator Spencer of Missouri has introduced a new zinc bill as a substitute for his measure now pending before the Finance Committee.

The Senate, on January 15, passed by a vote of 34 to 29 the bill establishing a government nitrate corporation under the Treasury Department. The bill goes to the House for final action.

The bill for the relief of war minerals claimants, commonly known as the "Court of Claims Bill," which has already passed the Senate, is still pending in the House. Secretary of the Interior Payne, in a letter to the House Committee on Mines and Mining, opposed the passage of this legislation on the ground that it is too broad and would permit of a reexamination of all claims. The bill came up under unanimous consent on January 17, but was opposed. The Mines and Mining Committee on January 13, unanimously agreed to favorably report the Senate bill covering the same provisions, which now occupies a preferential place on the calendar.

Representatives Rhodes and Hayden and Senator Henderson have introduced bills changing the date during which annual assessment work must be performed from January 1 to July 1.

Senator La Follette of Wisconsin endeavored to have the Senate reconsider the passage of the Poindexter anti-strike bill. It is prob-

able that the Senate will reconsider the passage of this measure, which would apply to coal mines and other industries connected with transportation and commerce.

One of the important pieces of legislation which received final action was the passage by Congress, over the President's veto, of the bill for the revival of the War Finance Corporation.

Senator Gore of Oklahoma, introduced on January 6 a bill which provides a year's grace in the payment for additional assessments of revenue taxes.

The sub-committee to whom the Senate Committee on Judiciary referred the bill repealing war legislation, including the Lever Food and Fuel Control Act, on January 17 by a vote of 4 to 3 decided to recommend the continuance of the Lever Food and Fuel Control Act.

Senator Phelan has introduced a bill which authorizes the President by proclamation to place embargoes against the exportation of petroleum oil.

The bill which was introduced last May providing for the creation of a Department of Education was reported with amendments on January 17 from the Committee on Education. The amended bill gives the authority and discretion in the act to Congress instead of the President as provided in the original bill.

A general resume of all of the bills above referred to follows:

## COAL.

**S. 4828. (The Federal Coal Act).** Introduced by Mr. Calder; referred to the Committee on Manufactures. The bill authorizes the Federal Trade Commission to currently require and secure reports respecting ownership, production, distribution, stocks, costs, sales, and profits in the coal industry and trade in so far as it deems necessary in the public interest. It may investigate from time to time the organization, business, conduct, practices, and management of persons and corporations producing coal. The powers of the Act with respect to corporations interested as consumers in the storage of coal extend only to reports and investigations covering the quantities of coal consumed by, the stocks of coal held by, and the kind of business engaged in by any person or corporation, etc. The reports may be required monthly or at regular or special periods as the commission may desire. The commission must make public promptly and submit to Congress a summarized statement of the information so gathered together with such explanations and recommendations as it shall deem useful to Congress and to the people of the United States. In these reports the Commission shall name any person or corporation charging a price for coal which it finds after hearings to be unreasonable, such report to be accompanied by a brief statement of facts

upon which such finding is based. The bill also provides that whenever any association exists having to do with the coal industry, it is also subject to investigation by the Federal Trade Commission. Section 5 of the bill requires that the Interstate Commerce Commission may require reports from railroads and shall compile information and statistics on the ratings of mines for the purpose of distribution of coal cars; also upon the loading, movement, reconignment, and unloading of coal or coal cars. These reports shall be currently done and shall cover monthly or other regular or special periods. The Interstate Commerce Commission must promptly summarize statements to be presented to Congress and to the people of the United States and shall transmit the same to the Federal Trade Commission for publication. Section 6 provides that the Geological Survey shall continue to publish its reports and bulletins concerning the industry and is authorized to call upon the Federal Trade Commission and the Interstate Commerce Commission to obtain for the Survey such data as is required for its reports. The Director of the Geological Survey may also secure information upon the subjects desired from such classes of persons or corporations having this information as the Federal Trade Commission and the Interstate Commerce Commission may mutually agree with the Director upon. In case of any controversy through the Courts resulting from the failure to comply with the provisions of the bill any person who refuses to attend or testify or answer any lawful inquiry shall be fined not less than \$1,000 nor more than \$5,000 or be imprisoned for not more than one year or both. If any person or corporation required by the Act to file any report or information shall fail to do so within the time fixed by the commission for filing the same, shall continue for thirty days after notice of such default, the person or corporation shall forfeit to the United States the sum of \$100 for each day of the continuance of such failure. A fine of \$1,000, imprisonment for six months or both, is imposed for any person or corporation who shall make any misleading entry or statement of fact in any report which is required to be filed. Section 10 provides that any officer or employee of the commission who shall make public any information obtained by the commission without its authority shall be punished by a fine not exceeding \$5,000, imprisonment for one year or both. Section 11 provides that in order to insure the furnishing of information which the Federal Trade Commission is authorized to collect, the President shall issue upon application a license, pursuant to this section, to every operator and dealer in coal, any part of whose business is in commerce, and after ninety days from the date the Act becomes effective no operator or dealer shall engage in or carry on any coal business in commerce, unless he shall secure and hold a license issued pur-

suant to this section. A fine of \$5,000 or imprisonment for not more than two years or both is imposed for violation of these provisions; with the exception that license shall be required of any operator or dealer whose gross sales during the preceding year was less than \$50,000. Section 12 provides that whenever the Federal Trade Commission shall determine that an emergency exists or threatens in the coal industry, which seems likely to produce a shortage or bring about unusual or unreasonable prices in coal, the President is authorized to declare the existence of an emergency and thereupon to fix maximum coal prices and dealer's commissions and margins, which price shall continue until the President declares the emergency to have passed. During such an emergency the President is empowered to revoke the license of any operator or dealer who has sold coal or charged a commission in excess of those fixed. The President is authorized in such an emergency to deal in coal at reasonable prices and to control the production, movement, and distribution of coal in such manner and to such extent as he shall deem necessary. Section 13 provides that in commerce in the coal industry and trade no owner, operator, or dealer shall sell or lease coal lands to any person or corporation when such owner, etc., or any of his directors, officers, or managers, shall at the same time be an officer, director, manager, etc., has a substantial interest in the purchasing person or corporation expect when such selling, leasing, and purchasing shall be under open competitive bidding. It is specifically provided, however, that nothing in this section shall prevent any industrial concern from owning and operating a coal mine or coal mines for its own use and consumption. Section 14 levies a brokerage tax to be paid into the Treasury of the United States on the sale of all coal procured directly from an operator of a sum equivalent to one-half of all amounts charged as commissions or received as margins on such sales in excess of 15c per ton and not more than 30c per ton, and a sum equivalent to three-fourths of all amounts charged as commissions or received as margins on such sales in excess of 30c per ton; and a sum equivalent to 90 per cent of all amounts charged as commissions or received as margins in excess of 5c per ton on all sales by dealers of coal not procured directly from operators. It also provides that no such taxes shall be assessed against or paid by any dealer whose gross annual sales during his preceding fiscal year aggregated less than \$500,000 on sales of coal procured directly from operators. Section 15 provides that the Secretary of Labor shall investigate from time to time the wages, output per person, working conditions, terms of employment, and the living expenses of miners and other workmen employed in mines, such information to be available at times of general readjustment of wage contracts in the coal industry. The Bureau of Mines is directed to investigate methods and processes for storage and combustion of coal and the transmission of power from fuel centers and conduct such experiments and research as it may find advisable to determine the most efficient means for such storage, combustion, and transportation, etc., and to make a preliminary report to Congress with respect thereto not later than June 1, 1921. The Bureau is also authorized to investigate the desirability and practicability of prescribing in the marketing of coal statutory standards and inspections for various kinds and grades of coal. Section 19 provides that the Federal Trade Commission and the Interstate Commerce Commission, respectively, shall have power to make and enforce all rules and regulations necessary for carrying out the provisions of the Act and to prescribe a method of procedure to be followed in making the investigations which are authorized by the

Act. Section 20 provides that nothing in the Act shall be construed to limit or repeal any provisions contained in the Federal Trade Commission Act or the Interstate Commerce Commission Act, or the Transportation Act. Section 21 appropriates the sum of \$10,000 each to the Director of the Geological Survey and the Interstate Commerce Commission and \$25,000 to the Federal Trade Commission to defray the expenditures incurred in the performance of carrying out the Act.

**H. R. 15728.** Introduced by Mr. Butler of Pennsylvania; referred to the House Naval Committee. This bill provides that until January 30, 1922, the President is authorized to requisition fuel necessary for the maintenance of the Navy and to requisition facilities for handling and storing such fuel. He shall ascertain and pay a just compensation therefor. If this compensation so determined is not satisfactory to the person entitled to receive it such person shall be paid 75 per cent of the amount and shall be entitled to sue the United States to recover such further sum, as added to the 75 per cent as will make up such amount as will be just compensation for the property so requisitioned. The bill specifically provides that nothing in the Act shall be construed to require any person to furnish to the Government any fuel held by him and reasonably required for consumption or use by himself and dependents.

**H. Res. 645.** Introduced by Mr. Newton of Minnesota; referred to the Committee on Interstate and Foreign Commerce. This resolution provides that the Federal Trade Commission be directed to ascertain and report to the House of Representatives at the earliest moment the tonnage of anthracite and bituminous coal purchased by the Government within the territorial limits of the United States during the years 1919 and 1920; also the production cost, mine price, prices paid by the Government, arrangements under which it was purchased by the Government, compensation paid to any broker or agent in the purchase thereof, compensation paid by the seller to any broker or agent or middleman in connection with such sale, and whether such payment and the amount was made with the knowledge of a responsible representative of the Government. They are also to report upon the amount paid by the government for all coal so furnished by it in 1920 over the excess of the amount paid by it for the same tonnage in 1919. The Federal Trade Commission is directed to promptly report to the House any attempt to interfere with the securing of the information called for by the resolution.

**S. 4864.** Introduced by Senator Smoot. The bill amends the Act for leasing of coal lands in Alaska by providing for the lease in 40-acre tracts of not exceeding 2,560 acres for coal, lignite, and associated minerals to any citizen of the United States or corporation or municipality organized under the United States laws, stipulating that the majority of the stock of such corporation shall at all times be owned and held by Americans. Railroads shall not acquire through lease or permit coal or coal lands in excess of an area or quantity as may be required and used solely for its own use. All claims to existing rights of any coal lands on which final proof has been submitted and which are now pending before the General Land Office or the Secretary of the Interior shall be settled within one year from the passage of this Act.

**S. 2189.** This bill provides for the agricultural entries on coal lands in Alaska. It has been reported from the Committee on

Territories, to which it was referred, without amendment. The bill passed the Senate on January 5 and has gone to the House. It provides for agricultural entries on coal, oil or gas lands.

## TARIFF

**Emergency Bill H. R. 15275.** Introduced by Mr. Fordney; referred to the Committee on Ways and Means, from which committee it was favorably reported without amendment and passed the House of Representatives on December 22, 1920. The life of the Act is limited to a period of ten months and imposes a tariff upon wheat, potatoes, rice, cattle, cotton, wool, etc. It is now being considered by the Senate Finance Committee.

**H. Con. Res. 68-69.** Introduced by Mr. Fordney. Providing for a summary of tariff information for 1920 to be prepared for the use of the Ways and Means Committee and that statistics of imports and duties from 1908 to 1918 be prepared for the use of the same committee.

**H. R. 15448.** Introduced by Mr. Esch; referred to the Committee on Interstate and Foreign Commerce. (Consolidating the work of compiling foreign commerce statistics.) The bill provides for the Bureau of Customs Statistics to be transferred from the Department of the Treasury to the Department of Commerce, with which Bureau shall be consolidated the Division of Statistics of the Bureau of Foreign and Domestic Commerce.

## ZINC

**Amending H. R. 6238.** Proposed by Mr. Spencer, providing that immediately upon the passage of the Act there shall be levied upon all zinc-bearing ores containing more than 10 per cent and less than 25 per cent of metallic zinc a duty of 1½¢ per pound on the metallic zinc contained therein; upon all zinc-bearing ores containing more than 25 per cent metallic zinc 2 cents per pound. No duty shall be levied upon metallic contents of zinc ores containing less than 10 per cent of metallic zinc. All importations of zinc-bearing ores shall be subject to estimated rate of duty at port of entry. Upon blocks or pigs and zinc dust a duty of two cents per pound is imposed; in sheets coated or plated with nickel two cents per pound; old and worn out, fit only to be remanufactured, one cent per pound. A duty of one cent per pound is imposed upon zinc oxide and white pigment containing zinc, but not containing lead; ground in oil 1¼ cents per pound; sulphide of zinc, white or white sulphide of zinc, 1¼ cents per pound; chloride of zinc and sulphate of zinc, one cent per pound.

## REVENUE

**S. 4794. (Amending Sections 216 and 223 of the Revenue Act).** Introduced by Mr. Trammell; referred to the Committee on Finance. The bill provides that Section 216 be amended to read: In the case of a single person, a personal exemption of \$1,500, or in case of the head of a family or a married person living with husband or wife, a personal exemption of \$3,000. A husband and wife living together shall receive but one personal exemption of \$3,000 against their aggregate net income; and in case they make separate returns, the personal exemption of \$3,000 may be taken by either or divided between them. Section 223 is amended to include the above provisions with the exception that they shall make under oath a return stating specifically the items of their gross income and the deductions and credits allowed.



**S. 4806.** (*Amending subdivision B of Section 250*). Introduced by Mr. Gore; referred to the Committee on Finance. This subdivision is amended by adding at the end the following paragraph: Where additional taxes are assessed or determined because of understatement without intent to defraud, as herein provided, the commissioner may accept payment of such additional taxes in installments fixed with respect to time and amount at his discretion, but in no case to exceed twelve months from the date upon which the taxpayer is notified that such additional taxes are due. Except in cases in which a higher rate of interest is now imposed by law, the amount of taxes so deferred shall bear interest at the rate of two-thirds of one per cent a month from the date upon which the taxpayer is so notified, to be paid at each deferred installment date, in addition to the amount of tax then payable. The commissioner, with the approval of the Secretary, is hereby authorized to make all needful rules and regulations for the enforcement of the provisions of this Act.

**H. R. 14198.** (*Simplifying the Revenue Act*). This bill was passed by the House of Representatives on May 27, 1920, and referred to the Finance Committee of the Senate. It amends Section 202 of the Revenue Act which provides for the basis for determining gain or loss by providing that in case the property is acquired before March 1, 1913, the fair market price or value of the property shall be of that date. In case the property is acquired, except by gift, etc., on or after that date the cost, inventory value, etc., shall be made in accordance with Section 203. In case the property is acquired by gift since February 28, 1913, the same basis is used as it would have been had it remained in the hands of the donor. In the case of the sale or exchange of property acquired by gift, the entire amount received therefor shall be included in the gross income of the donee, unless he submits with his return, evidence satisfactory to the commissioner showing the basis in the hands of the last preceding owner who acquired the property other than by gift. In the case of property acquired after February 28, 1913, by bequest, etc., the basis shall be the fair market price or value of such property on the date of acquisition. Section 202 of the Act is amended by adding at the end thereof a new sub-division which reads as follows: In the case of stock dividends paid after February 28, 1913, the cost to the taxpayer of each share of old and new stock shall be the cost of the old shares of stock (or the market price or value thereof as of March 1, 1913, if acquired prior thereto,) divided by the total number of old and new shares of stock: Provided, that in cases in which the old and new shares of stock differ materially in character or preference, the cost of the old shares of stock (or the market price or value thereof as of March 1, 1913, if acquired prior thereto) shall be apportioned between the old and new shares of stock as nearly as may be in proportion to the respective values of each at the time the new shares of stock were acquired. A new section is included after Title II on extraordinary net income which provides that compensation received in any taxable year beginning after December 31, 1919, for personal service rendered by the taxpayer during a period of more than three years the gain derived shall be deemed to be extraordinary. This section specifically defines the terms capital assets, compensation received, and gain derived. If the extraordinary income of a taxpayer amounts to more than 20 per cent of his entire gross income for the taxable year, such income may at his option be apportioned ratably to the years or parts thereof during which such service was rendered, which

amount shall be added to the other income of the taxpayer for such year and the tax redetermined upon the corrected amount at the rates applicable to such year. Section 4 of the bill amends Section 250 to provide that the amount of tax due under any return made under this or prior Acts shall be determined and assessed by the commissioner within five years after the return was made, except in the case of false or fraudulent returns with intent to evade the tax or with the consent of both the commissioner and the taxpayer or as provided by Sections 207, 214 and 234. No suit or proceeding for the collection of any tax shall be begun after the expiration of five years after the date when the return was made. Title XIII is amended by the adding of two new sections, Section 1321 and 1322, the first of which provides that if after a determination and assessment in any case the taxpayer has without protest paid in whole any tax or penalty and an agreement is made in writing between the taxpayer and the commissioner, such determination and assessment shall be final and conclusive and the case shall not be reopened or the determination and assessment modified by any officer, employee, or agent of the United States, and no unit, action or proceeding to annul, modify, or set aside such determination or assessment shall be entertained by any court of the United States. Section 1322 provides that in case a regulation of Treasury decision made by the commissioner or the Secretary is reversed by a subsequent regulation or Treasury decision, and such reversal is not immediately required by an opinion of the Attorney General or a decision of a court of competent jurisdiction, such subsequent regulation or Treasury decision may, in the discretion of the commissioner, be applied without retroactive effect. Section 6 provides that on and after January 1, 1920, 4 per cent and  $4\frac{1}{2}$  per cent liberty bonds shall be exempt from graduated additional income taxes, commonly known as surtaxes, and excess-profits and war-profits taxes, now or hereafter imposed upon the income or profits of individuals, partnerships, etc., in respect to the interest on aggregate principal amounts thereof shall until the expiration of two years after the date of termination of the war between the United States and Germany on \$125,000 aggregate principal amounts; and for three years more on \$50,000 aggregate principal amount.

**H. R. 15524.** Introduced by Mr. Steener-son; referred to the Committee on Post Office and Post Roads. The bill amends Section 1103 of the Revenue Act to read as follows: "That in the case of newspapers and periodicals entitled to be entered as second-class matter and maintained by and in the interest of patriotic, religious, educational, scientific, philanthropic, agricultural, labor, or fraternal organizations or associations not organized for profit and none of the net income of which inures to the benefit of any private stockholder or individual, the second-class postage rates shall be, irrespective of the zone in which delivered (except when the same are deposited in a letter-carrier office for delivery by its carriers, in which case the rates shall be the same as now provided by law),  $1\frac{1}{2}$ ¢ a pound or fraction thereof on and after July 1, 1918, and until July 1, 1919, and on and after July 1, 1919,  $1\frac{1}{4}$ ¢ a pound or fraction thereof. The publishers of such newspapers or periodicals, before being entitled to the foregoing rates, shall furnish to the Postmaster General, at such times and under such conditions as he may prescribe, satisfactory evidence that none of the net income of such organization inures to the benefit of any private stockholder or individual."

**H. R. 15376.** Introduced by Mr. Howard; referred to the Committee on Ways and Means. The bill amends sub-division B of section 250 of the Revenue Act by providing that where additional taxes are assessed or determined because of understatement without intent to defraud and it is shown to the satisfaction of the commissioner that the taxpayer is without adequate means to pay such additional taxes immediately and is unable to borrow the amount required to pay such taxes at reasonable rates of interest the commissioner may accept payment of such additional taxes in installments fixed with respect to time and amount at his discretion, but in no case to exceed twelve months from the date upon which the taxpayer is notified that such additional taxes are due. Except in cases in which a higher rate of interest is now imposed by law, the amount of taxes so deferred shall bear interest at the rate of two-thirds of 1 per cent a month from the date upon which the taxpayer is so notified, to be paid at each deferred installment date, in addition to the amount of tax then payable. The commissioner, with the approval of the Secretary, is authorized to make all needful rules and regulations for the enforcement of the provisions of the Act.

**H. R. 14198.** Introduced by Mr. Henderson; referred to the Committee on Finance. The bill amends the Revenue Act by inserting on page 4, line 12, after "1913": "Or receipts from oil and gas under sections 18 and 19 of Act of Congress approved February 25, 1920."

#### LABOR.

**H. R. 15227.** Introduced by Mr. Upshaw; referred to the Committee on Judiciary. The bill makes it unlawful for any alien residing in the United States to vote or in any other way to participate in the management of labor unions or other industrial organizations the members of which are employed in or have power to interfere with interstate or foreign commerce, or that are employed upon any public works of the United States. A fine of \$500 or imprisonment for not more than two years is imposed for violation of the Act.

**S. 4671.** (*Prohibiting immigration for five years*). Introduced by Mr. Overman; referred to the Committee on Immigration. The bill provides that upon the passage of the Act that immigration of aliens to the United States be suspended for a period of five years. Proper safe guards are placed around ministers, students, travelers, etc.

**Senate Con. Res. 37.** Introduced by Mr. Borah. This resolution reads as follows: Whereas, according to a survey of the industrial situation lately made, there are at present out of employment in the United States two million three hundred and twenty five thousand workers, many of whose families are now in great need; and Whereas we are advised by the presence of a resolution now before a committee of this body that there are three million five hundred thousand children in Europe on the verge of starvation and must die for want of clothes and food unless saved by the charity of the people of the United States; and Whereas we are now carrying a fixed debt of \$24,000,000,000 and meeting current expenditures to the amount of about \$4,000,000,000 per annum, with a deficit of nearly \$2,000,000,000 confronting us; and Whereas the business of the country has advised us that it will be very difficult for business to meet the coming installment of taxes; and Whereas the party now in charge of the legislative department of the Government, and soon to be in charge of all the



departments, pledged the people of this country in the last campaign that not one dollar should be appropriated from the Treasury of the United States except when absolutely necessary to meet the unavoidable expenses of the Government; and Whereas in the face of these burdens and sufferings, and in defiance of these pledges, and in the midst of great distress everywhere about us, it is proposed to provide for the most costly, the most expensive and ostentatious presidential inauguration upon the 4th of March, 1921, ever occurring in the history of this or any other country, thus drawing upon the Federal and State Treasuries for hundreds of thousands of dollars which the people in the end must pay; and Whereas it is proposed further to throw open certain public buildings and interrupt public business to the detriment and cost of the Government and the people of this country; and Whereas we have already provided, so far as this body is concerned for an expenditure of \$50,000; and Whereas it is now proposed to appropriate other and further large sums of money; Now therefore be it resolved by the Senate (the House of Representatives concurring), that no other or further sums of money than that already provided for shall be appropriated from the Treasury of the United States to meet any of the expenses of the inauguration of March 4, 1921. Sec. 2. That no public buildings be vacated or that public business be in any wise interrupted to enable the holding of an inaugural ball.

#### TRANSPORTATION.

S. 4812. (*Reduction in rates.*) Introduced by Mr. Trammell; referred to the Committee on Interstate Commerce. The bill amends Section 15a, paragraph 3, of the Interstate Commerce Act by providing that on and after April 1, 1921, common carriers engaged in interstate commerce shall be authorized to make rates which will produce returns of not exceeding 4 per cent of the aggregate property value of the common carriers.

H. R. 15551. (*Amending Section 204 and Section 209 of the Transportation Act.*) Introduced by Mr. Winslow; referred to the Committee on Interstate and Foreign Commerce. The bill provides that the commission shall promptly certify to the Secretary of the Treasury the several amounts payable to the carriers. The Secretary is authorized to draw warrants in favor of each of such carriers upon the Treasury of the United States for the amount shown in the certificates. The bill provides an amount sufficient to pay the total of such warrants. It provides certain provisions in ascertaining the amounts that are payable to the carriers. Section 209 is amended by providing that as soon as practicable after the expiration of the guaranty period the Secretary of the Treasury shall pay the necessary amount to make good the guaranty to each carrier. Sufficient amount is appropriated to pay these amounts in full and certain regulations are made surrounding the guaranty or ascertaining what is due each carrier.

H. R. 15306. (*Amending Transportation Act.*) Introduced by Mr. Madden; referred to the Committee on Interstate and Foreign Commerce. The bill amends Section 301 and 307, 301 being amended by adding the following: (1) Upon written request for a conference between the carriers and the employees or subordinate officials thereof, being submitted either by the authorized representatives of the carriers or of the employees or the subordinate officials, the party so petitioned shall respond in writing within ten days from the date of the receipt of the request for such conference. (2) In order to

secure the fullest and most representative expression of either or both parties to any dispute which might arise and which might be adjusted by and under this title, the right to organize is granted to the carriers or their representatives and to the employees and subordinate officials of the carriers or their representatives. Section 307 is amended by adding the following: To prevent the establishment of an inequality or inequalities of increases in wages or of treatment, the result of previous or possible future wage orders or adjustments, the predominant existing hourly or mileage units employed in computing time and on overtime, or the predominant existing rules and practices governing working conditions shall be standardized and applied alike to all classified carrier employees.

#### OIL

S. 4866. Introduced by Mr. Phelan; referred to the Committee on Naval Affairs. The bill provides that whenever the President shall make proclamation to that effect, it shall be unlawful to export from or ship from, or take out of the United States any petroleum or petroleum products produced in the United States. A fine of \$10,000, imprisonment for not more than two years, or both is imposed for violation of the provisions of the Act.

#### MONETARY

H. R. 15397. Introduced by Mr. Britten; referred to the Committee on Coinage, Weights, and Measures. This bill establishes a branch mint of the United States in the city of Chicago and appropriates \$300,000 to carry out its provisions.

S. 4736. Introduced by Mr. Lenroot. Referred to the Committee on Finance. The bill provides that any person who was the original purchaser from the United States of any Liberty bonds or Victory loan notes, and has continuously owned the bonds or notes, may exchange them at par and accrued interest for United States notes to an equal amount. The bill provides that these notes shall bear interest at such rate as not to exceed such per cent as in the judgment of the Secretary of the Treasury will enable the notes to be sold at par in the market. Application for exchange is made through any Federal Reserve bank to the Secretary of the Treasury.

S. 4729. Introduced by Mr. McLean; referred to the Committee on Banking and Currency. This bill amends Section 7 of the Federal Reserve Act by providing that the net earnings derived by the United States from Federal reserve banks shall, in the discretion of the Secretary, be used to supplement the gold reserve held against outstanding United States notes, or shall be applied to the reduction of the outstanding bonded indebtedness. Should a Federal reserve bank be dissolved or go into liquidation, any surplus remaining, after the payment of all debts, shall become the property of the United States and shall be similarly applied.

H. R. 15303. Introduced by Mr. McFadden; referred to the Committee on Banking and Currency. The bill amends section 9 of the Federal Reserve Act by striking out the proviso in paragraph 10 and inserting the following: No Federal reserve bank shall be permitted to discount for any State bank or trust company notes, drafts, or bills of exchange of any one borrower who is liable for borrowed money to such State bank or trust company in an amount greater than that which could be borrowed lawfully from such

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#### MINING IN FOREIGN COUNTRIES

S. 4747. (*Oil lands.*) Introduced by Mr. McKellar; referred to the Committee on Foreign relations. The bill prohibits the acquisition by any foreign government or by the nationals of any foreign government of deposits of oil or oil shale or any land containing such deposits, or any stock or bond interest in corporations owning such lands or deposits, or contracts for the purchase and development of the same, when the purpose is to export such products or otherwise use them in foreign commerce unless the same privileges are granted to citizens of the United States by those countries desiring to acquire such lands as is extended by the United States to such foreign countries. The same provisions surround the development of oil or oil shale. Section 3 of the bill provides that the Shipping Board is required to report on or before July 1, 1921, what foreign governments, etc., are violating the Act and if any, no oil or oil shale shall be exported to that foreign government. Penalties which are now in force under the Espionage Act, passed June 15, 1917, are applicable to those who violate the provisions of this Act.

#### ANNUAL ASSESSMENT

S. 4678. Introduced by Mr. Henderson; referred to the Committee on Mines and Mining. The bill provides that the period within which the work required to be done annually on all unpatented mineral claims shall commence on the first day of January, succeeding the date of location of such claim, and this section shall apply to all claims located since the 10th day of May, 1872, as to claims located on and after the 1st day of January, 1920, on the 1st day of July, 1921, and annually on the 1st day of July thereafter; or, if located subsequently to the 1st day of July, 1921, on the 1st day of July following the location of such claims, and annually on the 1st day of July thereafter; and, as to all claims located prior to the 1st day of January, 1920, such period shall commence during the year 1921 on the 1st day of July, and annually on the 1st day of July thereafter. The provisions of the bill extend to the territory of Alaska. This bill is similar to the emergency bill signed by President Wilson on December 31st, extending the time for 1920 work to July 1st, 1921.

H. R. 15686. (*Changing period of annual assessment.*) Introduced by Mr. Hayden; referred to the Committee on Mines and Mining. This bill is similar to all bills introduced along this line and provides that the time of annual assessment work be changed from January 1st to July 1st.

H. R. 15715, another assessment bill, introduced by Mr. Rhodes of Missouri, is practically the same as that introduced by Mr. Hayden.

## FARM LOAN

**H. R. 15302.** Introduced by Mr. McFadden; referred to the Committee on Banking and Currency. The bill amends Section 20 of the Federal Farm Loan Act by providing that bonds provided for in this Act shall be issued in denominations of \$40, \$100, \$500, \$1,000, and such larger denominations as the Federal Farm Loan Board may authorize; they shall run for specified minimum and maximum periods, subject to payment and retirement, at the option of the land bank, at any time after the minimum period specified in the bonds, which shall not be longer than ten years from the date of their issue. They shall have interest coupons attached, payable semiannually, and shall be issued in series of not less than \$50,000, the amount and terms to be fixed by the Federal Farm Loan Board. They shall bear a rate of interest not to exceed 5 per cent per annum.

## METRIC SYSTEM

**H. R. 15420.** Introduced by Mr. Britten; and S. 4675 introduced by Mr. Frelinghuysen. Both referred to the Committee on Standards, Weights, and Measures. This bill is similar to those bills introduced in the last session of Congress providing for a metric system to replace our present system of measures and weights. This bill was reviewed in the March, 1920, issue of the Mining Congress Journal. The subject met with considerable opposition and got no farther than committee stage. These bills are both similar to the other bills which have been introduced upon this subject.

## FOOD CONTROL

**H. R. 15453.** Introduced by Mr. Sinclair; referred to the Committee on Agriculture. The bill so amends Section 14 of the Food Control Act that it guarantees the minimum price of wheat to cover the crop of 1920 by extending the provisions of the Food Act to maintain the price of wheat at \$2.26 per bushel at the terminal elevators.

## TRADING WITH THE ENEMY

**H. R. 15634.** Introduced by Mr. Moores; referred to the Committee on Interstate and Foreign Commerce. The bill amends Section 9 of the Trading with the Enemy Act by striking out the clause "said citizenship having been acquired by birth in the United States" and by adding the provision that this sub-division shall not be deemed to apply to any woman who was born in Germany or Austria-Hungary of parents originally subjects of either of those countries, who, after becoming American citizens by naturalization, had returned to the country of their original citizenship. Section 2 provides that all persons are relieved from any future duty of reporting any property of enemies or allies of enemies to the Alien Property Custodian.

## BORON

**H. R. 15445.** Introduced by Mr. Sinnott; referred to the Committee on Public Lands. Providing that hereafter all deposits of boron minerals and lands containing such deposits, owned by the United States, except deposits of potassium borates provided for in the Act approved October 2, 1917 (Forty Statutes, page 297), shall be subject to disposition only in the form and manner prescribed for the disposal of borates of sodium in the Act approved February 25, 1920 (Forty-one Statutes, page 437), entitled, "An Act to promote the mining of coal, phosphate, oil, oil shale, gas, and sodium on the public domain." A similar bill was introduced by Senator Smoot of Utah.

## NATIONAL LOBBIES

**S. 4867.** Introduced by Mr. Overman; referred to the Committee on Judiciary. The bill provides that any person or any agent or counsel for any person, firm, company, etc., who shall attempt, directly or indirectly, by any corrupt or improper method to influence any Member of Congress to vote for or against any bill pending in Congress or shall attempt by any improper method to defeat legislation shall be punished upon conviction by a fine of \$1,000 or not more than \$5,000. The bill provides that if any firm, company, etc., employs any person to act in any manner as a legislative counsel in connection with legislation, they shall within one week after the date of such employment enter the name of the person so employed upon a legislative docket, which shall be prepared by the Secretary of the Senate and the Clerk of the House. In this docket is to be kept the names of all persons who appear at public hearings, the name and business address of the employer for whom such persons appear, the name and residence and occupation of the person employed, the date of employment and agreement therefor, length of time employment is to continue, and the subject of legislation to which employment relates. These dockets shall be public record and open to inspection by any citizen of the United States. No person shall appear as counsel before any committee of Congress or act as agent in respect to any legislation unless it appears upon the docket of legislation. A fine of not less than \$200 or more than \$5,000 is imposed for violation of the act.

**S. 4868.** Introduced by Mr. Curtis; referred to the Committee on Judiciary. The bill is substantially the same as S. 4867.

## GOVERNMENT CONTRACTS

**H. J. Res. 443.** (Contract forms.) Introduced by Mr. Britten; referred to the Committee on Judiciary. The resolution provides that the President be authorized to appoint a board from among the officers and employees of the executive departments, who shall serve without additional compensation, whose duty it shall be to devise a harmonious system of forms to be used by the several departments and independent establishments in the execution of contracts on behalf of the United States. The board will report its conclusions to the President, and the system devised by it will, upon the approval of the President, become effective, and will thereafter be used in all contracts made by the executive departments and independent establishments of the Government. The expenditure of the sum of \$10,000, or so much thereof as shall be necessary, is authorized for the clerical and other expenses of said board.

## GEOLOGICAL SURVEY WANTS A DEFINITE PROGRAM.

THE U. S. GEOLOGICAL SURVEY needs a definite and continuing program, according to the belief of its Director, Dr. George Otis Smith.

"During the 40 years of its existence, the Geological Survey's policy has been to contribute material for a national plan to gain scientific knowledge of the Nation's mineral resources, yet the greatest need of the Geological Survey to-day is a plan for itself—a program," Dr. Smith said. "The recognized function of a scientific bureau is to collect and arrange facts upon which the nation may base its plans for future development, but the Geological Survey now finds itself unable to plan adequately its own development. It lacks that assurance of con-

tinued appropriations that would encourage or warrant long-term investigations, a few of which are absolutely essential to any forward looking program of scientific research. The increasing gap between the government scale of professional salaries and the scale prevailing in commercial employment causes a continual change in personnel that makes the administration of scientific work almost hopeless. The responsible official, in arranging to have the work done that is most needed, actually has his choice of projects determined for him by the personnel available. For each scientist of fully tested ability available the choice has to be made between several pieces of work, all of which deserve immediate attention. Even less satisfactory is the situation in which an urgent call for a geologic field examination has to be met by assigning to it an untried worker.

"The net result is that the Geological Survey is not fully occupying the field which is recognized as peculiarly its own. It could, however, occupy that field. With slightly increased appropriations, and especially with the declaration of intent by Congress to regard the scientific bureau as having successfully passed its probationary period, greater stability might be expected and some progress might be made in the adoption of a program fitted to the country's needs."

## PERSONALS

John C. Howard, director of the American Mining Congress, was in Washington for several days during the month on matters before the General Land Office. After a short stay in New York, he has returned to his home at Salt Lake.

Jerome J. Day spent several days in Washington during his eastern trip early in January. He has returned to his home at Wallace, Idaho.

Otto Ruhl represented the lead and zinc producers of Missouri and Oklahoma before the Ways and Means Committee in their hearings on the question of a zinc tariff, January 13.

Imer Pett, Governor of the Utah Chapter of the American Mining Congress, spent several days at Washington headquarters before returning to his home at Salt Lake.

Charles Potts of Deerwood, Minnesota, spent some time in Washington during the month on matters before the War Minerals Relief Commission.

A. Scott Thompson is again at Miami, Oklahoma, after spending several weeks in Washington.

Ernest Bamberger represented Utah lead producers at hearings before the Ways and Means Committee on the question of tariff held January 13.

Clinton R. Crane of the St. Joe Lead and Zinc Company was in Washington during the month conferring with Mining Congress officials on matters of importance to the industry.

Edgar Palmer of the New Jersey Zinc Company was a caller at the offices of the Mining Congress January 12.

H. P. Baker of the New Idria Quicksilver Company is in Washington in the interest of the quicksilver producers in the matter of a revision of the tariff laws.

Judge Sanner of the Ophir Hill Mining Company and the Clark interests was in Washington during the month on matters before the Revenue Department.

W. Mont Ferry of Salt Lake City, Utah, was in Washington during the month.





CONGRESSMAN FESS, in opposing the Emergency Tariff Measure, sounds a note of encouragement which the MINING CONGRESS JOURNAL is glad to repeat, particularly in these days when so much of pessimism has been voiced:

"We are in the process of readjustment, known in the business world as liquidation. It is the stage of returning to normal, where the laws of trade operate upon economic lines, where the law of supply and demand again is permitted to operate without the interference of government either to retard or to artificially stimulate. Everybody should assist in getting away from the war basis of abnormal cost of production. We can not reduce the cost of living and at the same time keep up the abnormal cost of production. In this process of liquidation all classes will suffer the evil effects of over-stimulus of war, because the nation will find an overproduction without a corresponding amount for consumption. The transportation system is now rapidly getting on a sound basis, so that from that source—the most important—we need have little fear.

"Upon every hand we note a marked increase in labor efficiency, which is one of the most hopeful symptoms of the future. Our wealth is intact and only awaits the application of sound business principles again. In my opinion, we should guard against the clamor for unwise legislation at such a period. It can at best be merely palliative and will only defer the day of accounting if we refuse to see the real situation. If the Federal Reserve system will ever break down it will be because it is a government institution which will become responsive to the clamor for government relief of various unfortunate situations which appeal for aid through government loans. I believe in the principal of 'less government in business and more business in government.' Congress should treat the matter of war liquidation as a business proposition. Any attempt at Government financing will involve possibilities fraught with danger. Labor will be justified in demanding government subsidies to keep up wages to tide over. Liquidation must come. War levels can not be permanent. All classes should assist in readjustment. Where relief by law can be lent it should not be withheld. But the remedy must not be worse than the disease, and the public must not be deceived by promises that cannot be kept."

CONGRESSMAN ROGERS of Massachusetts, in discussing the Emergency Tariff Measure and basing his objection thereto upon the fact that it is class legislation, said:

"I believe in the principle of the protective tariff. But a protective tariff is justifiable only if it is universal; only if it comprehends

in its protection all American-made products which need protection. Industry is hard hit. It needs protection. It recognizes that agriculture also needs protection. It does not ask something for itself it is unwilling to extend to its fellow. On the selfish ground alone no one industry in our country, however great, can prosper if men and women in other occupations are out of work, for the necessary market then is lacking. Prosperity or adversity in the United States is not local, it is nation wide."

CONGRESSMAN LONGWORTH in urging a protective tariff, advances the sound argument that before we pass hasty legislation some conception must be gained of conditions upon which to base protection. In part, he said:

"The principal of protection is founded upon the equalization of the relative costs of production of articles between this and the competing countries. Is it going to be possible under such conditions to arrive at the information upon which a thoroughly scientific protective tariff may be founded? I fear that it will be many months before a tariff law which will endure the tests of time and experience can be passed in both Houses and signed by the President. The policy enunciated by President McKinley is a safe one. He insisted upon the complete preservation of the home market as the prerequisite for the making of any arrangement with any foreign nation under which they might have certain advantages in dealing in our market, and that only under condition that we should have certain advantages in dealing in theirs. President Wilson proposes that we take down the bars against the world in order to enable certain nations of Europe to dispose of thirteen billion dollars worth of goods here. Against such a policy the American people have recorded themselves, as I interpret the result of the recent election, by an emphatic and tremendous majority. We have received no specific instructions with regard to the adoption of the policy laid down by President McKinley, but I believe it to be in no way inconsistent with the instructions we have received, and that if we shall determine to legislate so far as the tariff is concerned with a view to making the debts of the allies more easy of collection, that it is through reciprocal trade agreements that we can best and most effectively accomplish it. I adhere rigidly to the belief that there is nothing inconsistent in retaining our home market and at the same time occupying a position of commanding influence in the markets of the world. I am prepared to go far to help those nations toward financial and industrial rehabilitation who have suffered far more than we as a result of the war, particularly those whose soldiers fought side by side with us for the

preservation of Christian civilization, but I insist that it must never be at the sacrifice of the industrial independence of America."

### Everybody Has a Favorite Appropriation Measure

THE COMPLETE REVERSAL of the attitude of Congress in the appropriation of moneys for Federal expenditure has been apparent in the discussion of the appropriation bills which have been before Congress.

SENATOR CHARLES S. THOMAS of Colorado, who consistently decries the unbusinesslike expenditures of large sums of money, in discussing the appropriation bill, said:

"So long as money obtained by appropriation bills from the Treasury is to be administered and expended locally, so long will we continue to saddle upon the national government both the possession and the performance of those important duties and obligations, which is but another name for the exercise of local self-government. In other words we are wiping out the actual distinctions between the states with their consent and approval and active cooperation and substituting a huge central authority in its place and substituting also for the local powers federal bureaus and boards and agencies, with their headquarters in Washington and their myrmidons spread all over the country. The lice in Egypt were scarcely thicker than the federal employees of the United States, scattered from the Pacific to the Atlantic, each representing in his own opinion the sovereignty and majesty of the republic and sometimes making and enforcing his own rules upon the people, occasionally in harmony but frequently in conflict with statute law, thus making the city of Washington the county seat of practically every county in the United States.

"What has not yet been bureaucratized will be before the nation is five years older. I think I am safe in asserting that one-half of the bills that are enacted into law by Congress require for their operation and administration a bureau or a board or a commission, and once it is created it is immortal. It defies time, tides, and the threatening processes of political instability. It is here to stay, and any attempt to remove it is met by the opposition of the organized employees and representatives of it, backed by every other organization of similar character, with the result that we damn them in the cloak-room and vote for them in the Senate.

"I will guarantee that I can take any measure that has promise for an appropriation for local expenditure and I can get the support for it of practically all of the men and all of the women of the state where the money is to



be expended. It counts, of course; it counts so much that we legislate here not according to our convictions but according to the demands of our constituents; in other words, we are no longer Senators; we are delegates; we are rubber stamps. We used to keep one ear to the ground, but now we keep both, and as soon as we think we know what the prevailing sentiment is at home we make up our minds. As a result leadership, statesmanship, originality of legislation, the standards of the Congress and of legislatures have been transformed, and when the whip cracks outside we get into line. This is bureaucracy in action. With our civil service organized and affiliating with the American Federation of Labor, and with all the other organizations of a kindred character united we can now, under such pressure, easily pass a resolution in Congress dissolving the Union or declaring war against Great Britain or opening trade with the Bolsheviks or take any other action that seems to have behind it sufficient pressure of a potential political character.

"There used to be a play when I was a young man called 'Mulberry Sellers in the Gilded Age,' the chief character in which always ended his rhapsodical statement to his friends, 'I go in for the old flag and an appropriation.' So do we; we stand when we hear the music of the Star-Spangled Banner and proclaim our one-hundred per cent Americanism, and support all the appropriation bills for which we get a chance to vote."

### Conservation As Opposed To Hoarding

THE TRYING PERIOD just behind us has perhaps dimmed and caused us to neglect a very important subject—Conservation. M. L. REQUA, in an address before the American Petroleum Institute, advocates not only conservation in its best form but the cooperation of those producers of raw materials to the end that the country may be enlightened as to the needs of industry. In part he says:

"We are beginning to realize that we cannot with impunity draw indefinitely and wastefully upon our natural resources; we cannot shut our eyes to the evolution that is continuous from generation to generation, or as individuals burn the candle at both ends, without sooner or later being confronted with a day of reckoning. The seriousness—or perhaps the hopelessness—of that day is entirely dependent upon the speed with which each individual in the nation is made familiar with the facts and is educated through proper and wise efforts to an intelligent comprehension of the fundamentals involved. Whether this education will assure upon the part of the public intelligent and constructive demands, in place of those ill-considered and unwise in character which have been so much in evidence in the past, depends in large part upon industry itself.

"Government, on its part, has an obligation to perform that may be summed up in the words of Theodore Roosevelt, who said: 'This nation must get out of the business of politics and into business of government.' We must demand of our public officials that same high type of citizenship which we demand of our individual citizens; the welfare of the individual and the party must give way to the public welfare; and if both government and industry will approach in this spirit the problems that are with us today and that are to arise in the future, satisfactory solution is a foregone conclusion.

"In handling our great national problems of conservation we shall, of course, make little or no headway unless and until the weight of public opinion is thrown affirmatively into the balance in favor of the proposal, whatever it may be. And in turn it may be truthfully said that public opinion can be aroused only by proper presentation of a meritorious cause.

"If we are to achieve success, it goes without saying, that the facts must be truthfully presented and that mutual confidence, must be established, as between the public on the one hand and the purveyor of facts upon the other. These facts must be statements of truth, presented in the form of cold unemotional statistics and precise statements that speak for themselves and that need no special-ist or expert to construe them.

"Unfortunately, conservation, in the minds of many, has become confused with hoarding—the withdrawal from immediate use; in short, sabotage as related to raw materials. For years the coal of Alaska has remained unmined, in large part because of regulations impossible of performance when balanced against commercial necessity and a profit justifying the investment. The water-powers of the West have in the past failed to receive adequate development and utilization because of similar folly in promulgation of regulations; and it is only after ten years that any solution of the leasing of withdrawn petroleum lands has been forthcoming, and even after these years of weary waiting that measure, as I view it, leaves much to be desired.

"True conservation is not hoarding, but the wise use of natural resources; and it implies not merely the preserving in unimpaired efficiency, but also a wise and equitable exhaustion with a maximum efficiency and a minimum waste.

"While it is important that we practice conservation—that is, use our heritage wisely and well—we can prove that, most of all, its highest development and practice should be, must be, by those who win the minerals from the earth's crust. In many a lonely canyon, upon many a rugged mountain-side and desert waste throughout the West, stand idle mining plants once the scene of feverish activities, now peopled only with ghosts—abandoned and decaying; forlorn sentinels upon the highway of progress; marking the passing of some portion of our natural resources; grim reminders of the fate that in time will be the destiny of all our mineral reserves. Because the outcrops of those deposits were upon the surface—easily found and easily exhausted—they afford a striking example of the truth of the statement that our natural resources are far from limitless.

"More and more it is being recognized that great industries dealing in the basic commodities essential to the industrial life of the nation owe a service obligation that must be discharged.

"I have been told more than once that my faith in the ability of the industry to govern itself is misplaced; that the individual interest was supreme and often ran counter to public interest; that selfish considerations precluded the success of my highly idealistic and impractical belief; that because certain very necessary results had been accomplished in war time it did not at all follow that similar results could be expected or accomplished in time of peace; and that, some day, I should awaken and find myself disillusioned.

"Notwithstanding the prophecies of disaster, I am still strong in my belief; if for no other reason, because I think it a matter of industrial self-preservation. The underlying fundamental truth seems to me absurdly simple. Either the industry must, through self-government, prove its ability to meet and

successfully deal with the economic forces confronting it, or, sooner or later, those forces will compel recognition and action on the part of the government. It is not a question of ignoring a condition, but rather of choosing the course to be followed. For we shall, regardless of our wishes, be forced to follow some road—either that of industrial cooperation and conservation, or of government dictation.

"Government aid may be required. When it is, it can be asked for; but the task is emphatically one for the industry itself to perform, if it is to be done efficiently and properly. And so long as it is done efficiently and well, there is neither cause nor justification for governmental interference.

"Because I have seen the tragic inefficiency and waste of governmental Washington I am convinced that the petroleum industry can most efficiently perform its service through self-government and regulation, asking for legislation only to make more effective rational activities. I have a horror of government control or supervision, save in its broadest terms, because I know it spells less efficiency on the part of the petroleum industry; but it is obvious that that control will be exercised if we, the petroleum industry, fail in self-government.

"We must make it our task to present to the public the problems of the industry, truthfully and adequately, to the end that we may retain that confidence and cooperation necessary in permitting us freedom of action in the performance of satisfactory service. And in so doing we shall come to realize that our responsibility as trustees in the administration of one of the nation's greatest assets, our obligations to the public, to our stockholders, and to ourselves, can be satisfactorily and successfully performed only by the practice of cooperation and conservation."

### Labor, Industry and the Open Shop

IN THE SINCERE EFFORT to reach some basis satisfactory to employer and employee in the abolishment of strikes or lock-outs, much has been written and various theories advanced. WALTER GORDON MERRITT, in an article upon "Social Control of Industrial Warfare," has the following interesting comment to make:

"As soon as society tolerates the rule that a man shall not pursue his trade except he be a member of a particular union, and that an industry will not be allowed to function except through that union, it artificially protects that union from the ordinary laws of reward and punishment and removes all incentive for good conduct.

"If unions are to progress by service rather than by force, and society is to furnish an incentive for such service, the cause of human liberty must be protected so that any workman will not be seriously impeded in the exercise of his fundamental rights of citizenship merely because he is not a union man. Any other policy is monopoly in its worst form and with its worst consequences. It is only when unionism is subject in some degree to the wholesome forces of competition on the part of those employers and employees who may be abused by it that the processes of moral restraint will be operative."



## EIGHTY SEVEN COMPANIES ATTACK IRON ORE FREIGHT RATES

By C. H. FARRELL

**T**HE LAKE SUPERIOR IRON ORE ASSOCIATION, on behalf of eighty-seven different mining companies operating in Minnesota, Michigan and Wisconsin, has filed a complaint with the Interstate Commerce Commission attacking the rates on iron ore, in carloads, from points on the Mesabi, Vermilion and Cuyana Ranges to Two Harbors and Duluth, Minnesota and Superior, Wisconsin; from points on Menominee Range to Escanaba, Michigan; from points on the Gogebie Range to Ashland, Wisconsin; from points in the Gwynn, Princeton and Republic Districts on the Marquette Range to Marquette, Michigan; and from points in the Negaunee District on the Marquette Range to Marquette, Michigan. The complaint recites that the rates now in effect are the result of successive increases published since the commission established reasonable iron ore rates in a proceeding a few years ago and that they had become, prior to the increases, through changing conditions, unjust and unreasonable in and of themselves. The increases made during federal control, under stress of war conditions, are said to be emergency rates which should have been withdrawn as soon as the emergency passed, and the contention is made that reasonable rates on this traffic, including all service from the mines until the ore reaches the hold of the vessels, should not exceed the cost of the services plus six per cent per annum on the reasonable value of the property investment required in the performance of this transportation service because rates in excess thereof are equivalent to a rebate to the United States Steel Corporation which controls two of the common carriers which, combined, haul more than half the entire iron ore tonnage. This complaint has been served by the commission upon the carriers in interest, and will be assigned for hearing in the ordinary course of events.

**COST AND TONNAGE OF RAILROAD FUEL IN 1920.** The Interstate Commerce Commission has instituted a proceeding of inquiry and investigation with a view of ascertaining the facts regarding the increased cost of railroad fuel to the railroads of the United States during the year 1920 as compared with the year 1919.

This investigation will be assigned for hearing in due course and is the result of a resolution of the Senate asking for the facts referred to above, as well as a statement of the tonnage of railroad fuel in 1920, its total cost, its average cost per ton, and the average cost per ton of railroad fuel in 1919, to the

end that the difference in cost between the two years may plainly appear.

**CONSTRUCTION AND REPAIR OF RAILWAY EQUIPMENT.** The Commission, upon its own motion, has entered upon a proceeding of inquiry and investigation into the reports that common carriers have caused and are causing certain of their locomotives and other equipment to be constructed and repaired at construction or repair shops other than their own and have purchased and are purchasing, from or through such shops, material and supplies used in such construction and repair at costs in excess of those for similar construction and repairs in their own shops, including material and supplies therefor, in disregard of efficient and economical management, resulting in unreasonable expenditures and otherwise contrary to law. Reports to this effect were first circulated by representatives of the railroad brotherhoods and have been given considerable publicity. The Association of Railway Executives, through S. M. Felton, president of the Chicago Great Western, has recently replied to the charges of the brotherhoods and has stated, in substance, that the railways, upon the termination of federal control, found themselves confronted with the necessity of handling an unprecedentedly large freight business with an abnormal number of their locomotives and cars needing heavy repairs, due to the hard usage and inadequate maintenance during federal control. On account of the eight-hour day, the abolition of piece work and the shortage of labor, the carriers found the capacity of their shops for making repairs less than in former years, Mr. Felton said, and although the shops were worked to the limit of their capacity some of the roads found it impossible to do all the repair work in their own shops and gave the surplus to outside plants. Mr. Felton refers to this surplus as relatively very small. Taking the figures of the labor brotherhoods, he states that the carriers had 617 locomotives repaired in outside shops, and if this figure is correct, which Mr. Felton doubts, it is less than one per cent of the total number of locomotives owned by the carriers, this number being 65,000. Taking the figure of the brotherhoods on freight cars repaired in outside shops, which was said to be 30,000, the per cent of the total number of freight cars repaired in outside shops is less than 1.3 per cent of the total number of freight cars owned. That number is given as 2,400,000. Mr. Felton thus reaches the conclusion that the amount of work given to outside shops was

extremely small compared to the amount done in the railroad shops, and that this outside work was made necessary by the heavy traffic demands and the various other reasons already referred to above. It is to be noted, however, that Mr. Felton compares the equipment repaired with the total amount owned and not with the total amount repaired. He also states that the orders for repairs in outside shops have been reduced rapidly or cancelled as the freight business began to decline, and that reductions in shop forces had been made because of this decline and not for the purpose of giving work to outside shops.

**RATES ON SMELTER PRODUCTS.** The commission has suspended until April 29 the operation of various tariffs filed by Agent Gomph on behalf of carriers carrying smelter products, in carloads, from Nevada and Utah to points in California. These tariffs provide for reduced commodity rates on shipments of smelter products between the points mentioned instead of the class rates now in effect.

**RAILWAY SUPPLIES.**—Section 10 of the Clayton Act passed some time ago, which has been suspended by Congress from time to time, finally went into effect on January 1, after the President had vetoed a further suspension of it. This section prohibits the carriers from purchasing supplies and materials in excess of \$50,000 in any one year except through competitive bids from companies in which purchasing agents or officials of the railroads are financially interested. Senator Frelinghuysen has proposed a substitute for this section and hearings have been conducted on it. The position of the carriers is that they have no objection to the underlying principle of the section, but that they do think it should be amended so as to be workable, citing, as an example, the effective section which might be construed to prevent a parent carrier from disposing of supplies and materials to a subsidiary carrier except through bids. Request was also made that the section be amended so that it would not be mandatory upon the carrier to accept the lowest bid received for supplies or materials, but that carriers be allowed to exercise their judgment in connection with such transactions so that if a still lower price could be obtained they would be at liberty to accept it if they saw fit or could refuse all bids offered. The carriers also denied that they had been delinquent in seeking amendment of this act and stated that war conditions had been largely responsible for the present situation.



**GUARANTY TO RAILROADS.** Following refusal of the Secretary of the Treasury to pay to carriers amounts certified by the Interstate Commerce Commission as due under the Transportation Act until the commission could issue a final certificate of all amounts that would be due, the carriers have attempted in two ways to get partial payments of the money in question. First, mandamus proceedings were brought in the Supreme Court of the District of Columbia to require the Secretary of the Treasury to make these partial payments regardless of the fact that the commission could not certify for some time to come the entire amount due. The Supreme Court of the District of Columbia held with the Secretary of the Treasury, and the question has been appealed to the Court of Appeals of the District of Columbia, where it now rests. Second, a bill was introduced in the House of Representatives by Representative Winslow, of Massachusetts, authorizing the Treasury Department to make these partial payments. Hearings on this bill have been conducted and the carriers, through their various representatives, have contended that these amounts are due to them as a matter of right and are necessary for the proper operation of the railroads and should not be held up further. The proceeding in court will undoubtedly be appealed to the Supreme Court of the United States, and even if it is ultimately successful it will be a long time before the carriers can get their money. Therefore, the railroads contend that the Winslow bill should be passed and the Treasury authorized to honor certificates of the commission for partial payments instead of waiting, in some instances for years, until the final accounting can be made and the whole amount stated in one lump sum.

**EARNINGS.** For the month of November the carriers in this country report a net railway operating income of \$57,741,937, which is \$41,544,063, or 41.8 per cent below the amount which it was estimated would be earned under the increased rates fixed by the Interstate Commerce Commission. On this basis the carriers would earn annually approximately 3½ per cent on the value of their properties as tentatively fixed for rate-making purposes by the commission. The operating income, however, for November, 1920, was an increase of 170.8 per cent over that for November, 1919, but this increase is, of course, principally due to the strike of bituminous coal miners during November of 1919. Since the carriers assumed entire responsibility for their lines on September 1, that is, for three months, the operating income has been \$219,507,735, which is \$101,449,265 less than was expected under the increased rates. On this basis the carriers would earn 4.1 per cent annually. For November in the eastern district the net operating income compared with last year showed an increase of 527.6 per cent, the operating revenues increased 46.9 per cent, while the operating expenses increased 33.5 per cent. For the southern district operating income increased 150.3 per cent, operating revenues 27.1 per cent, while operating expenses increased 22.6 per cent. In the western district the increase in operating income was 32.1 per cent, in operating revenues 26 per cent, and in operating expenses 27.3 per cent.

**Quicksilver Needs Protection.**—Senator Phelan of California recently brought to the attention of the U. S. Senate a joint resolution passed by the senate and the assembly of California asking for a protective tariff on quicksilver. All California quicksilver mines are said to be either shut down or in the hands of receivers, their plight being due to competition of convict-produced quicksilver imported from Spain.

### JOHN HARVEY NEW CHIEF CLERK OF INTERIOR DEPARTMENT

JOHN HARVEY, assistant and secretary to Secretary of the Interior John Barton Payne, has been appointed chief clerk of the Interior Department, succeeding Ezekiel G. Ayres, who held the position for six years. Mr. Harvey assumed the duties of his new office January 15.



JOHN HARVEY

Mr. Harvey entered the government service as clerk, August 21, 1901. He was appointed clerk in charge of publications of the Interior Department in 1917 and was made Chief of the division of appointments, mails and files in 1918. He was appointed assistant to Secretary Payne on March 16, 1920. Mr. Harvey was private secretary to four different first assistant Secretaries of the Interior in succession, Frank Pierce, Samuel Adams, Andrieus A. Jones (now senator from New Mexico), and Alexander T. Vogelsang.

The new chief clerk comes from Texas, having been born at Denison on December 8, 1877. He took the examination for the civil service while employed by the M. K. & T. Railroad at Greenville, Texas. He is an ardent fisherman and at the Christmas celebration of the Interior Department he was presented with a rod and reel and unofficially designated as the Izaak Walton of the Interior Department.

### MORE THAN 3,000 APPLY FOR PROSPECTING PERMITS

NEARLY 6,000 ACRES of land in Wyoming were classified as within producing oil and gas structures by the Secretary of the Interior during December. This brought the total area thus classified under the act of February 25, 1920, up to 353,654 acres.

Two-thousand four-hundred acres in Alaska, valuable for the development of water power, were withdrawn during the same month. This brings the total area of lands thus withdrawn to 2,591,029 acres.

During the month 439 applications for oil prospecting permits were reported on. The total number of oil prospecting applications reported on since July 1, 1920, was thus brought to 3,180.

### POWER APPLICATIONS PASS THIRTEEN-MILLION MARK

SINCE THE APPROVAL of the Federal Water Power Act, on June 10, 1920, applications involving thirteen million horsepower have been presented to the Federal Power Commission and others are coming in daily. This amount is five times greater than the total acted upon by the government in the preceding twenty years. It equals the combined installation in hydro, steam and gas, in all the central electric stations, commercial and municipal, which had been constructed in the United States up to 1917. It is 60 per cent greater than the present developed water power of the United States, and is approximately 75 per cent of the developed water power of the world.

Executive Secretary O. C. Merrill is the only paid employee of the Federal Power Commission. He holds this distinction because the commission was not given authority to hire anybody else. He has thirty-one field investigators and other assistants, all of whom are furnished by the War, Interior and Agricultural Departments. The commission recently issued a statement that the development of water power projects (all of which call for an expenditure of two billion dollars) will be held up unless the commission is given authority to use the appropriation it now has for the employment of personnel, and unless it is given necessary appropriations in succeeding years.

### RESCUE CAR ITINERARIES.

Car No. 3, in charge of J. V. Berry, foreman miner, will remain at Alicia, Pa., till February 4, and thereafter pursue the following itinerary: Republic, Pa., Feb. 5-11; Grays Landing, Pa., Feb. 12-18; Star Junction, Pa., Feb. 19-25; Uniontown, Pa., Feb. 26-March 4; Oliver, Pa., March 5-11; Connelville, Pa., March 12-18.

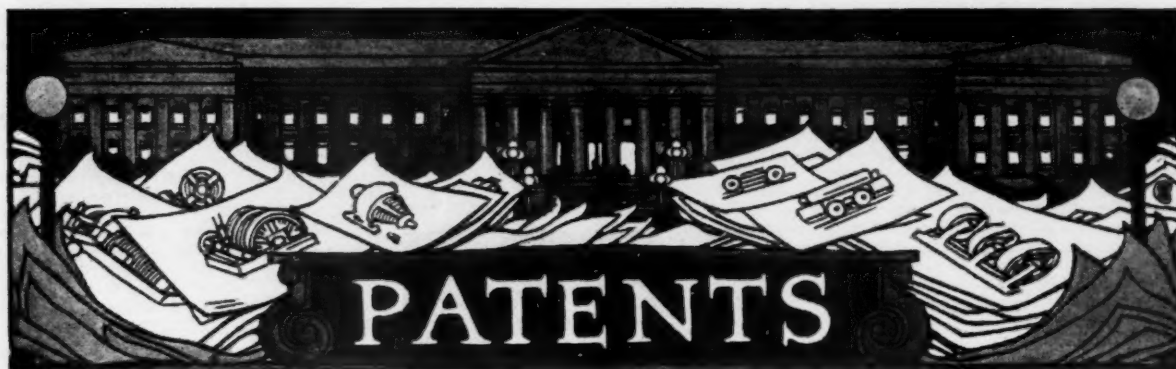
Car No. 8 working from the Pittsburgh station of the Bureau of Mines, and in charge of Archie Forbes, foreman miner, will remain at Tams, West Virginia, until February 5, and will carry out the following itinerary during the month: Statesbury, West Virginia, February 5 to February 12; Winding Gulf, West Virginia, February 12 to February 19; Pemberton, West Virginia, February 19 to February 26.

Car No. 10, with A. T. Martinson, foreman miner, in charge, will remain at the Rogers mine, Iron River, Mich., until Feb. 5, and thereafter pursue the following itinerary: James mine, Iron River, Feb. 7-12; Bates mine, Iron River, Feb. 14-19; Caspian mine, Caspian, Mich., Feb. 21-26; Warner mine, Amasa, Mich., Feb. 28 to March 5; Balkan mine, Alpha, Mich., March 7-12.

Car No. 1, with J. M. Webb, foreman miner, in charge, will remain at Seagraves, Ky., until Feb. 4, and thereafter proceed as follows: Kentenia, Ky., Feb. 5 to 10; Evarts, Ky., Feb. 11 to 16; Harlan, Ky., Feb. 17 to 23; Copper Hill, Tenn., Feb. 28 to March 9.

**GOVERNMENT INCOME FROM OIL LEASES.**—The sum of \$6,780,000 had been tendered the government on January 1 in back royalties by oil companies applying for leases within the San Francisco field division. Of this amount, \$2,870,000 came from oil produced outside the naval reserves and \$3,910,000 from oil produced inside the naval reserves. Estimates place the yield of land embraced in these applications at 340,000 barrels per month which, at increased rates which will be fixed in the leases, will amount to \$100,000 per month.





1,359,496 and 1,359,497—*F. G. Gasche*, Chicago, Ill., Nov. 23, 1920.

**METHOD AND APPARATUS FOR CONCENTRATING ORES**, consisting in initiating an ore laden aeriform stream at a given velocity and static pressure, discharging the same into a confined atmosphere having substantially the same static pressure as the discharging stream, whereby lateral dispersion of the ore particles is prevented, thereafter converting said static pressure of the stream into kinetic energy, thereby imparting high velocity to the ore particles and in issuing the high velocity stream against the separation atmosphere.

1,360,053—*F. J. Stumpf*, Mount Washington, Mo., Nov. 23, 1920.

**OIL WELL CLEANER.**

1,360,116—*C. V. King*, Shenandoah, Pa., Nov. 23, 1920.

**JIG FOR SEPARATING COAL AND LIGHT MATERIAL FROM FOREIGN MATTER** having an inclined perforated plate forming the bottom of the separating chamber, a settling chamber at the forward end of the plate, a vertical partition between the separating and vertical chambers, said partition having its lower end disposed above the perforated plate, thereby forming a passage between the said chambers.

1,360,404—*G. S. Hollister*, Boston, Mass., and *E. V. Cooper*, Newton, Mass., assigned to the Oil Well Renewal Co., Nov. 30, 1920.

**OIL WELL HEATER** comprising insulating cores, resistance coils, and coil connecting wires engaged with said cores, a liquid tight casing therefor, a conducting cable composed of elongated lead wires, an oil resisting flexible shield enclosing the exposed portions of the lead wires outside the casing and constituting a liquid type package.

1,360,666—*L. D. Mills*, San Francisco, California, Nov. 30, 1920. Assigned to the Merrill Co.

**PROCESS OF EXTRACTING COPPER FROM ITS ORE.** The step of using finally divided, freshly reduced iron as a means for precipitating copper from its solution.

1,360,703—*Charles Allen*, El Paso, Texas, Nov. 30, 1920.

**SLIME PULP THICKENER**, comprising a tank, a fluid compartment having flexible walls disposed within said tank, a float chamber disposed above said compartment and in communication therewith, a float in said chamber for registering variations in the density of the pulp, means for regulating the buoyancy of the float, and for connecting it with a discharge orifice whereby the liquid discharge is of a predetermined density.

CONDUCTED BY JOHN BOYLE, JR.

1,360,816—*Peter Taylor*, Ottumwa, Iowa, Nov. 30, 1920.

**MINE CAR WHEEL** in which there is a reinforcing partition extending across the hollow hub and having radial projections embedded in the spokes of the wheel.

1,360,913—*E. Forrest*, Caney, Kansas.

**GAS TRAP FOR WELLS** having an inlet for liquid, a trap controlling said inlet which permits liquid to enter the inlet and which excludes gaseous fluid, a valve which normally closes said inlet, and means actuated by the level of the liquid for opening said valve.

1,360,997—*F. H. Armstrong*, Vulcan, Michigan, Dec. 7, 1920.

**SHOVELLING MACHINE.**

1,361,171—*Carl Neilsen and Olaf Helleland*, Lillebo, Gruber, Norway, Dec. 7, 1920.

**DISCHARGING DEVICE FOR THE HEAVIEST ORE IN JIGS** comprising an upwardly extending chute, said chute having open sides, a gate adapted to close part of said open side and having a discharge opening to permit part of the chute to remain open for the passage of ore there through, the heavier ore collected in said receiving chamber being washed up said chute and through said discharge opening by the impulses of the water.

1,361,205—*P. C. VanZandt*, December 7, 1920, assigned Allis Chalmers Mfg. Co.

**COMBINATION MILL AND PROCESS OF GRINDING**, comprising a tube mill provided with primary and secondary grinding chambers, consisting in grinding the material in said primary chamber and then in said secondary chamber at a normal grinding level, changing the relative capacities of said chambers and maintaining the normal grinding level therein and subsequently continuing the grinding operation in said chambers as changed.

1,361,280 and 1,361,281—*R. C. Newhouse*, Wauwatosa, Wis., Dec. 7, 1920, assigned to Allis Chalmers Mfg. Co.

**COMMINUTING MILL** comprising a rotary shell, a head dividing said shell into chambers, said head comprising a wall, a continuous annular screen extending longitudinally and transversely of said wall, and a conveyor rib between said screen and said shell.

1,361,282—*W. E. Nolan*, Tulsa, Oklahoma, Dec. 7, 1920.

**METHOD OF SEALING OIL WELLS** consisting in electrically heating the walls of the water bearing and caving strata to cause the melting and coalescing of the material of the walls.

1,361,432—*I. R. Margetts and W. Fagergren*, Salt Lake City, Utah, Dec. 7, 1920.

**FLOTATION MACHINE** comprising a water tight housing, a rotary impeller therein, a shield over said impeller, baffles above the shield, means for supplying air to the interior of the impeller and for supplying pulp to the interior of the housing.

1,361,674—*S. H. Boylan*, Joplin, Mo., Dec. 7, 1920.

**OPERATING MECHANISM FOR ORE CONCENTRATING TABLES.**

1,362,116—*F. Laist and J. O. Elton*, Great Falls, Mont., Dec. 14, 1920 assigned to Anaconda Copper Mining Co.

**PROCESS OF EXTRACTING ZINC FROM ORES** comprising leaching the ore with dilute sulphuric acid in quantity insufficient for complete extraction of the zinc; electrolyzing the zinc sulphate solution with insoluble anodes to produce metallic zinc and a dilute acid solution, returning a portion of the said acid to the primary ore leaching operation and another portion to leaching the residue from the primary leaching operation.

1,362,370—*J. T. Terry, Jr.*, Salt Lake City, Utah, Dec. 14, 1920, assigned to Metals Recovery Company.

**FLOTATION APPARATUS** comprising a tank having inclined porous sides decreasing in thickness from top to bottom.

1,362,716—*R. T. McKee*, Chicago, Ill., Dec. 21, 1920.

**COAL LOADING DEVICE** comprising a power shovel, a pit car, means carried by the shovel for supporting coal and means carried by the car for engaging the coal supporting means for retaining the latter on the car when the shovel is withdrawn.

1,362,889—*N. A. Newdick*, Columbus, Ohio, Dec. 21, 1920.

**COAL LOADING MACHINE.**

1,362,958—*J. A. Nolan*, Bowerston, Ohio, Dec. 21, 1920.

**MINE CAR GAGER.**

# Mining and Petroleum Digest

## BETTER TIMES AHEAD

**THE MINING OUTLOOK** is bright. This is the way it appears to the *Denver Mining and Financial Record*, which takes great encouragement from the increasing number of inquiries after property for developmental purposes. We read:

"It is pleasing to note that a good inquiry is developing for mining properties. Prices asked for prospects and mines have about reached rock bottom and as spring draws near there is reason to believe that much new capital will find its way into western mining districts. Already plans are being perfected to rehabilitate numerous former producers forced into idleness through the scarcity of labor and the high cost of supplies. Silver mining districts are already feeling the wave of optimism that is gathering momentum daily. New ore bodies recently developed in Aspen, Colorado's famous silver district, made famous by the bonanza deposits of the white metal, have awakened new interest and when spring is with us again we may expect to see a general revival in the wonderful old camps of which Leadville is the center. It has been an open winter in Colorado to date and heavy snows are to be expected during the next couple of months. These snows insure a plentiful water supply for mining and placering.

"Western mines will be called upon to produce increasing tonnages of copper, zinc and lead to meet the requirements of manufacturers and builders. The gold and silver miners will give the world the necessary hard money to carry on the increased commerce, manufacturing and building and allow the nation to return to the good old days when gold was a part of our monetary system. The Colorado Metal Mining Association and the Colorado Chapter of the AMERICAN MINING CONGRESS in session here took action to assist the mining industry of Colorado to get back upon its feet. Every western state should do likewise, and our representatives in Congress should be made to know that their work includes a serious consideration of the needs of the mining industry."

**SOME WHOLESOME ADVICE** is given both to coal mine workmen and coal mine operators by the *Coal Mining Review*, which points out the dangers to be feared from selfishness. We read:

"The year just ended has made history for the coal mining industry. It has presented many new object lessons to the operators and miners. If those object lessons are permitted to be ignored by either the miners or operators or both, it will mean they who fail to learn while they live will pay the penalty of their folly. Study your difficulties the past year in order that you may in the future solve the problems of the coal industry intelligently and promptly. If miners and operators do not realize their individual and collective responsibility, they will be compelled to suffer from outside interference.

"Operators and miners on the threshold of the New Year should look calmly into the future, confident of the stability of our country and its institutions. Our country,

with unlimited natural resources, will participate in the tremendous work of reconstruction which is inevitable in every field of human effort. The year just beginning is not now as bright for the coal mining industry as might be desired, but it is certain the industrial activities will soon take on new life and promptly reflect itself in greater activity in the coal mining industry.

"Miners, beware of the agitator who has no interest in your welfare except to deceive and mislead you to help promote his power for selfish interest. Operators, guard against that group of coal buyers who are continually trying to demoralize the coal mining industry to purchase cheap coal regardless of the effect on the miners, operators or the public. There is a prosperous future for the coal mining industry, but you can destroy that bright future, if you attempt to ignore the rights of the people, in an effort to promote and defend your own rights."

## CANADIAN MINING ENJOYS PROFITABLE YEAR.

**EXCEPT FOR THE WAR YEAR 1918**, Canadian mining production in 1920 was the largest, in point of value, in the country's history. Tabulations by the Canadian Bureau of Information, New York, show that the total value of Canadian mineral production for the year was \$200,000,000 as compared with \$176,686,000 in 1919. The 1918 production was valued at \$211,301,897. The year was featured by a marked recovery in the production of copper, zinc and nickel, also of coal, and there was also a small increase in the gold production. Production of zinc, coal and asbestos was the highest on record, while that of chromite, gypsum, flourspar, mica and salt was well sustained. Production figures for the year follow:

Total	\$200,000,000
Pig iron (short tons)	1,080,000
Steel ingots and castings (short tons)	1,220,000
Copper (lbs.)	82,500,000
Zinc (lbs.)	42,000,000
Gold	16,000,000
Silver (ounces)	13,500,000
Lead (lbs.)	35,500,000
Coal (short tons)	16,000,000
Nickel (lbs.)	61,500,000

## TEXAS POTASH TO BE DEVELOPED.

—Briny lakes of the South Plains region of Texas contain potash in great abundance, according to an article appearing in the *Journal of Industrial and Engineering Chemistry*. The water and earth of the lakes have recently been tested. One basin which covers nearly 6,000 acres has a potash content of 12 per cent. Practically all the briny lakes of the district have been under lease for potash development for more than a year, but nothing has been done toward development, largely through fear of large importations of German potash which might make operation of domestic deposits unprofitable. A new separation process is in operation in two plants at Antioch, Neb., which is said to give potash of higher purity and also to reduce the cost of operation. Tentative plans call for piping the potash laden water to railroad points where large plants are to be built for the separation of the potash.

## WORLD'S DEBTS AND PAPER MONEY STILL INCREASING

**BANKS ARE CONCERNED** at the decrease in gold production, and the diminution of the ratio of the gold reserve to notes in circulation. The National City Bank, New York, publishes the following figures and appropriate comment by its statistician, O. P. Austin:

"The second anniversary of the armistice finds the world's national debts and paper currency still rapidly expanding. It was hoped, expected, in fact, that the great expansion of national debts and paper currency which characterized the war period would terminate with its close, or, at least, during the year immediately following its cessation. But it now appears that the increases in both debts and paper currency have been as great in the second year after the armistice as in the year which immediately followed it. World national debts, which had grown from \$43,000,000,000 at the beginning of the war to \$212,000,000,000 at its close on November 11, 1918, advanced to about \$256,000,000,000 at the end of the first year of peace, and are now, at the end of the second year, approximately \$300,000,000,000, and the annual interest charges have advanced from \$1,750,000,000 in 1913 to \$12,000,000,000 in 1920. World paper currency shows a similar gain both during and since the war, having advanced from \$7,500,000,000 at the beginning of the war to \$43,000,000,000 at its close, \$55,000,000,000 one year after its termination, and approximately \$80,000,000,000 at the end of the second year. National debts, which increased \$170,000,000,000 during the war, added \$45,000,000,000 in the first year of peace and another \$40,000,000,000 in the second year just ending. World paper currency, which increased \$36,000,000,000 during the war, shows a further gain of about \$12,000,000,000 the first peace year and over \$25,000,000,000 in the second year, just ended.

"With the enormous increase in paper currency and the marked fall off in gold production the ratio of gold to notes has fallen from 66 per cent to less than 10 per cent. World paper currency is now eleven times as much as at the beginning of the war, and with gold production running at only three-fourths as much as at the beginning of the war and the world demanding increased quantities of the yellow metal for the arts and industries, the available supply as a backing or "reserve" bears a constantly diminishing ratio to the note circulation. An aggregation of the figures of gold and paper existing in the 50 principal countries for which figures are available shows that the ratio of gold to notes stood in the grand total at 66.8 per cent in 1914, 17.9 per cent in 1918, 13.7 per cent in 1919, and 9.3 per cent in 1920. In many countries the ratio of gold to notes is far below the general average above noted. In the case of Germany, the ratio of gold to notes is about six-tenths of 1 per cent; the notes of the Austro-Hungarian Bank, four-tenths of 1 per cent; and those of the Bank of Poland much lower.

## COPPER.

**R**AIL RATES have halted copper shipping and winter deliveries will probably be made from stocks stored in the east, according to the *Gazette* of Iron Mountain, Michigan, which says:

"Deliveries of such copper as might be sold during the winter months will probably be made entirely from the stocks now sorted in the east, in the opinion of mine managers, says a Calumet correspondent. High freight rates, by the rail routes, coupled with the lower selling prices for the metal preclude shipment of copper east by rail this winter, although for three or four years past it has been customary to fill large and small orders by rail.

"Practically all of the operating companies of the Lake Superior camps have large stocks of copper stored in the east, probably more than sufficient to care for all orders for the metal that will come in during the winter and until Great Lakes navigation resumes in the spring.

"Shipments of copper east by the water route last summer and fall exceeded somewhat the production of metal during the season of navigation, the early boats cleaning up practically all of the stocks held over from last winter. Total shipments from points in the camp were 69,624,000 pounds compared with 55,622,000 pounds the previous year. During November, alone, 16,468,000 pounds of copper were shipped east by boat. A very few rail shipments were made during the summer and they were of special grades of copper to fill special rush orders.

"Thirteen and a half cents a pound for copper means that the metal has been going at from 2 1-2 cents to 3 1-2 cents below the cost of manufacture, but even at that price the call for copper does not reach the figure of the curtailed production, it is stated. A number of consumers appeared when first reports were given out that copper was to be held at 13 1-2 cents, but the supply at this figure dropped off. Now that more can be had at 13 1-2 to 14 cents the buyers are few in number, evidently the expectation being that the commodity will go even lower. The larger companies, those that are best prepared to weather present conditions, are not offering their metal at below 15 cents, however. It is estimated that there is a surplus of 600,000,000 pounds of metal in this country alone.

"Copper mining people do not anticipate that there will be any further reduction of production, either here or in any of the western camps. In fact, most of the properties have curtailed to as low a point as possible and still hold their men. The crews of miners must be held now if they are to be had when industry in general "comes back," one mine manager declares, or the copper companies will find themselves in the position they occupied immediately after the opening of the war. Then, not anticipating the enormous demand for metal that developed among munitions manufacturers, they laid off thousands of men who immediately sought and found work in larger centers, and when the mills needed men they could not be had."

**COPPER FLUCTUATIONS** during 1920 are reviewed by the *American Metal Market* and *Daily Iron and Steel Report* as follows:

"The metal decline in prices of refined copper in 1920 ranged from 5½ to 6½¢ a pound. During the first three quarters of the year fluctuations were relatively narrow but the downward tendency was more pronounced as the year advanced. In the third quarter, the net decline ranged from ¾ to 1¼¢ a pound, whereas during the first quarter the net decline was only ½ to ¾¢ and in the

second quarter it ranged from ¾ to ¾¢ a pound. In October, however, the market broke sharply and during the following two months the decline was accelerated, ranging from 4.75¢ to 5¢ a pound. During the entire year, Lake fell 5½¢, electrolytic dropped 6½¢ and casting decline 6¢ per pound for prompt and nearby shipment in the outside market. Producers' prices broke 6¢ a pound but the decline meant more to producers because they absorbed the advanced freight rates, not only to consumers but also on copper shipped from western smelters to eastern refineries which caused an advance of ½¢ or more a pound in cost of production."

## THE PREPARATION OF COAL FOR EXPORT

**THIS IS THE TITLE** of an interesting article by Carl Scholz contained in the *West Virginia Mining News*. Mr. Scholz goes into details in discussing the preparation of coal for export in the Westfalia Districts of Germany, which he visited some years ago. His most notable observations were that coal from German mines was handled and sold by the Westfalia Syndicate, which controlled the output of 85,000,000 tons, under a single selling organization, whereas in England many companies acted independently and in strong competition with each other. The advantages of the German syndicate, which was always able to supply various grades of coal adapted to particular uses, were great, and were made greater by the circumstance that England at that time was suffering from strikes and other interruptions to operations.

In America also, as Mr. Scholz points out, coal mining operations are owned and directed by large numbers of people, few of whom are familiar with the requirements of foreign customers. The pooling idea developed on the Great Lakes, under which every shipper takes the place of a stockholder in a mutual company, is considered by the writer the most satisfactory solution of the problem presented by small ownership.

The German syndicate kept in constant touch with its customer-consumers with the view of learning which coal gave the best results, and what were the appliances to be used to reduce the fuel cost to the consumer to the minimum. The whole question is of especial interest to America now because of the high cost to the European consumer of American coal. Mr. Scholz deals with size, equipment used at the tipple, with the tipple itself, with certain other mine equipment and with transportation, and concludes with the following discussion of the personnel element and plea for closer co-operation of operators.

"The preparation of coal does not depend wholly upon the equipment provided; it rests more largely with the men engaged in the work, and while the tendency for mechanical appliances for mining and loading in the mine is increasing, the success in obtaining clean and best prepared coal depends largely upon the personnel of the mine. As is usually the case, during the period of a rush when coal is in demand and labor is scarce, mine management becomes very lax in enforcing rigid discipline which should prevail before more or less laxity results in the production of improper coal which, under normal conditions reacts to the disadvantage of both the operator and his miners. Miners can change their place of employment, but operators cannot change their mines. Therefore one of the principal duties of the manager of a mining property is to constantly strive for the best preparation at all times. If quality is given preference over quantity, in the long run this policy will pay the best dividends. This, however, does not preclude the natural trend for larger production, in fact, it requires it, because the expensive machinery required for good preparation costs more money than the ordinary coal tipple. Consequently large pro-

duction and good preparation are closely allied.

"It is firmly believed that it will be to the interest of the operators in the West Virginia, Virginia and Kentucky fields to get closer together on the subject of utilization of the coals which they export to ascertain, by investigation on the other side, just what steps can be taken at this end to deliver the most value to the consumer on the other end; to teach him how to burn our coal and what appliances we have found to give the best results on this side."

## NORTHWEST FEELS NEED OF PROTECTIVE TARIFF

**M**AGNESITE PRODUCERS are shutting down, and will stay shut down until the industry is protected by a tariff, according to information sent out by the *Spokane News Bureau*. Workmen have been laid off and other evidences of the need of protection are afforded. As the bureau's bulletin says:

"Between four and five hundred men have been laid off by the three big magnesite companies at Valley, Stevens county, fifty miles north of Spokane—the Northwest Magnesite company, the American Mineral Production company and the American Refractories company. Unfortunately this constitutes a real shutdown and not merely a curtailment as, with the exception of the American Mineral Production company, no production whatever is going on, the few men still left being employed simply in repairs. The exception noted is the one feature of the situation, the running of a small pioneer kiln, in which it produces some 100 to 150 tons a month of calcined magnesite for the eastern flooring and stucco trade. A large kiln is practically completed, with a capacity of 1,000 tons a month. As Washington magnesite has never before been used for this purpose, the company is entering upon this branch of the business cautiously, by operating only the small replica of its large kiln until such time as its brand of calcines has been tested through trial carload shipments, by large eastern consumers. Austria is now so nearly supplying the entire demand from that quarter that the remaining orders accruing to the large plants are negligible and the shut-down will undoubtedly last till a protective tariff is secured."

## PUBLICITY

**THE VALUE OF ADVERTISING** has been frequently commented upon in this department. The following, taken from the *Mining Journal* of Phoenix, Arizona, contains some very interesting comments upon the subject in relation to a very interesting law:

"The value of advertising has never been more effectively illustrated than in its relation to blue-sky laws. Among the first of the effective blue-sky laws was that known as the Pardee law, so named after the then Governor Pardee of California, who was chairman of the AMERICAN MINING CONGRESS committee which recommended the enactment by the various state legislatures of a law which made misrepresentation of any material fact relating to the value of mining stocks offered for sale a misdemeanor punishable by fine and imprisonment. The consummation of the fraud was not essential to the effective operation of this law; the only thing required was evidence that a misrepresentation had been made, and it was not required, as under the laws against false pretense, that someone should be swindled before the penalties were incurred. This law was enacted by a number of states, but was not properly advertised, and therefore did not attract popular attention."





## THE GENIE OF THE BOTTLE

**L**IKE the Genie from the "Arabian Nights", Prest-O-Lite is a wonderful force confined in a small cylinder.

It is subject to the command of its master—the trained welder and cutter. Under his direction it performs feats of wonder—anywhere, at any time.

In the subway builder's excavation, in the floating dry dock, in fact *any place—any time* where welding and cutting metals are required, the ready portability of Prest-O-Lite is an asset of genuine worth.

Ask us about the service plan of the Universal Gas with the Universal Service.

### THE PREST-O-LITE COMPANY, Inc.

General Offices: Carbide and Carbon Building

30 East 42nd Street, New York, N. Y.

Balfour Building, San Francisco

In Canada—Prest-O-Lite Co. of Canada, Limited, Toronto

# BUYER'S DIRECTORY

## ACID, SULPHURIC

Irvington Smelting & Refining Works, Irvington, N. J.

## AERIAL TRAMWAYS

American Steel & Wire Co., Chicago and New York.

## AIR COMPRESSORS

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
General Electric Co., Schenectady, N. Y.  
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

## AMALGAMATORS

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Mine Equipment & Supply Co., Denver, Colo.

## ARMATURES

General Electric Co., Schenectady, N. Y.  
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

## ARCHITECTS

Shourds-Stoner Co., Inc. Terre Haute, Ind.

## ASBESTOS PRODUCTS

Mikesell Bros. Co., 156 North La Salle St., Chicago, Ill.

## ASSAYERS

Walter E. Burlingame, 1736 Lawrence St., Denver, Colo.  
Indiana Laboratories Co., Hammond, Ind.  
Ledoux & Co., Inc., 99 John St., New York.  
Pennsylvania Smelting Co., Pittsburgh, Pa.  
W. L. Piers, 428 18th St., Denver, Colo.  
Thompson Balance Co., Denver, Colo.

## AUTOMATIC CAR CAGERS

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

## AUTOMATIC COAL SKIP

Jacobsen & Schraeder, Inc., Marquette Bldg., Chicago, Ill.  
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

## AUTOMATIC (Mine Doors, Truck and Electric Switches)

American Mine Door Co., Canton, Ohio.  
Dinwiddie Steel & Mfg. Co., St. Louis, Mo.

## BALANCES

Thompson Balance Co., Denver, Colo.

## BALL MILLS

Mine Equipment & Supply Co., Denver, Colo.  
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

## BATTERY-CHARGING EQUIPMENT

General Electric Co., Schenectady, N. Y.

## BEARINGS (Roller)

Hyatt Roller Bearing Co., 100 W. 41st St., New York, N. Y.

## BELTING (Conveyor, Elevator, Transmission)

Chicago Belting Co., Chicago, Ill.  
Goodrich Co., B. F., Akron, Ohio.  
Jeffrey Mfg. Co., 958 N. Fourth Avenue, Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
U. S. Rubber Co., New York City.

## BELTING, SILENT CHAIN

Morse Chain Co., Ithaca, N. Y.

## BELTING SUPPLIES

Chicago Belting Co., Chicago, Ill.  
U. S. Rubber Co., New York City.

## BINS (Coke and Coal)

Jeffrey Mfg. Co., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.

## BIT SHARPENERS

Denver Rock Drill Mfg. Co., Denver, Colo.

## BLASTING SUPPLIES

Atlas Powder Co., Wilmington, Del.  
du Pont Powder Co., The E. I., Wilmington, Del.  
Hercules Powder Co., Wilmington, Del.  
Illinois Powder Co., St. Louis, Mo.  
National Fuse & Powder Co., Denver, Colo.

## BLOWERS

General Electric Co., Schenectady, N. Y.

## BOILERS

Allis-Chalmers Mfg. Co., Milwaukee, Wis. (feed pump).  
Mine Equipment & Supply Co., Denver, Colo.

## BOLTS (Expansion)

Electric Service Supplies Co., 17th and Cambria Sts., Phila., Pa.

## BRATTICE CLOTH

Mikesell Brothers Co., 156 N. La Salle Street, Chicago, Ill.

## BREAKERS (Construction and Machinery)

Jeffrey Mfg. Co., Columbus, Ohio.  
Vulcan Iron Works, Wilkes-Barre, Pa.  
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.  
Wilmot Engineering Co., Hazleton, Pa.

## BRIQUETTING MACH.

General Briquetting Co., 25 Broad Street, New York City.  
Jeffrey Mfg. Co., Columbus, Ohio.

## BUCKETS (Clam Shell)

Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.

## BUCKETS (Elevator)

Hendrick Manufacturing Company, Carbondale, Penna.  
Jeffrey Mfg. Co., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Stephens-Adamson Mfg. Co., Aurora, Ill.

## CABLES (Connectors and Guides)

American Mine Door Co., Canton, Ohio.

## CABLEWAYS

Jeffrey Mfg. Co., Columbus, Ohio.  
Lidgerwood Mfg. Co., 96 Liberty St., New York City.

## CAGES

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.  
Holmes & Bros., Robert, Inc., Danville, Ill.  
Lidgerwood Mfg. Co., 96 Liberty St., New York City.

## CAGE (Safety Appliances)

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

## CAR DUMPS

Car-Dumper & Equipment Co., Chicago, Ill.  
Jacobsen & Schraeder, Inc., Marquette Bldg., Chicago, Ill.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.

## CAR AND CAR WHEELS

Hockensmith Mine Car Co., Penn Station, Pa.  
United Iron Works Co., Kansas City, Mo.

## CASTINGS

The Crane Co., 838 S. Michigan Ave., Chicago, Ill.  
Jeffrey Mfg. Co., 958 N. Fourth Street, Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
The Lunkenheimer Co., Cincinnati, Ohio.  
Mine Equipment & Supply Co., Denver, Colo.

## CEMENT CLOTH

Ludlow-Saylor Wire Co., The, St. Louis, Mo.

## CHAINS

Jeffrey Mfg. Co., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Morse Chain Co., Ithaca, N. Y.  
Stephens-Adamson Mfg. Co., Aurora, Ill.

## CHEMICALS

The Barrett Company, 90 West St., New York City.  
Roessler & Hasslacher Chemical Co., 100 William St., New York.

## CHEMISTS

Beach & Co., Denver, Colo.  
Walter E. Burlingame, 1736 Lawrence St., Denver, Colo.  
Hunt, Robt., & Co., Insurance Exchange, Chicago, Ill.  
Indiana Laboratories Co., Hammond, Ind.  
Ledoux & Co., A. R., Inc., 99 John St., New York City.  
W. L. Piers, 428 18th St., Denver, Colo.  
Richards, W. J., Denver, Colo.  
Western Chemical Co., Denver, Colo.

## CIRCUIT BREAKERS

Automatic Reclosing Circuit Breaker Co., The, Columbus, O.  
General Electric Co., Schenectady, N. Y.

## CIVIL ENGINEERS

Shourds-Stoner Co., Inc., Terre Haute, Ind.

## CLAMPS (Trolley)

Ohio Brass Co., Mansfield, Ohio.  
Electrical Railway Equipment Co., Cincinnati, Ohio.  
Electric Service Supplies Co., 17th and Cambria Sts., Phila., Pa.

## CLUTCHES

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.

## COAL COMPANIES

Bertha Coal Co., Pittsburgh, Pa.  
Lehigh Coal & Navigation Co., Philadelphia, Pa.  
Thorne, Neale & Co., Philadelphia, Pa.

## COAL CRUSHERS

American Pulverizer Co., 18th and Austin Sts., St. Louis, Mo.  
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.  
Jeffrey Mfg. Co., Columbus, O.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Stephens-Adamson Mfg. Co., Aurora, Ill.

## COAL CUTTERS

Goodman Mfg. Co., Chicago, Ill.  
Jeffrey Mfg. Co., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.

## COAL DRYING PLANTS

Jacobsen & Schraeder, Inc., Marquette Bldg., Chicago, Ill.  
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

## COAL HANDLING MACHINERY

Jeffrey Mfg. Co., Columbus, Ohio.  
Lidgerwood Mfg. Co., 96 Liberty St., New York City.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.  
Stephens-Adamson Mfg. Co., Aurora, Ill.

## COAL LOADING MACHINES

Myers-Whaley Company, Knoxville, Tenn.

## COAL MINING MACHINERY

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Goodman Mfg. Co., Chicago, Ill.  
Jeffrey Mfg. Co., Columbus, Ohio.  
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

## COAL MINE POWER PLANTS

Jacobsen & Schraeder, Inc., Marquette Bldg., Chicago, Ill.  
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

## COAL MINING PLANTS

Jacobsen & Schraeder, Inc., Marquette Bldg., Chicago, Ill.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

## COAL WASHING MACHINERY

Deister Concentrator Co., The, Fort Wayne, Ind.  
Jacobsen & Schraeder, Inc., Marquette Bldg., Chicago, Ill.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Stephens-Adamson Mfg. Co., Aurora, Ill.

## COAL WASHING PLANTS

Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.

## COCKS (Locomotive, Cylinder and Gauge)

The Crane Co., 838 S. Michigan Ave., Chicago, Ill.  
The Lunkenheimer Co., Cincinnati, Ohio.  
Nicholson, W. H., & Co., Wilkes-Barre, Pa.  
Ohio Brass Co., Mansfield, Ohio.

## COILS (Choke)

General Electric Co., Schenectady, N. Y.  
Electric Service Supplies Co., 17th and Cambria Sts., Phila., Pa.

## COMPANY STORES (Coupons)

Allison Coupon Co., Indianapolis, Ind.

## COMPRESSORS, AIR

General Electric Co., Schenectady, N. Y.

## CONCENTRATORS (Magnetic)

Dings Magnetic Separator Co., 100 Smith St., Milwaukee, Wis.  
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

## Why the Fort Wayne?

**T**HE adaptability of the Fort Wayne Electric Rock Drill is a constant source of enthusiastic comment.

The Fort Wayne may be operated on either direct or alternating current. Thus it is ready for business wherever electric current is available. You can hook it onto the trolley within a few minutes after it is unloaded.

As one rock man said, "We can stick it up, attach a line to the trolley, another to the rail, and go right ahead." And the way those rotary hammers tear into the rock is a joy to see. No power wasted—just pure energy properly directed—1700 blows a minute—each blow 150 pounds to the square inch.

Moving entails no expense or burden—one man can do it if necessary. "For many jobs," says a mine superintendent who knows, "we don't even have to take the Wayne off the truck."

There are many other reasons why you cannot afford to get along without the Fort Wayne Electric Rock Drill if you have any amount of rock work to do.



*Let us tell you all about this great Drill and its work—our literature will prove interesting and instructive, and we'll gladly send it for the asking.*

ELECTRICAL HEADQUARTERS

**Union Electric Company, PITTSBURGH, PA.**

## Hockensmith Wheel and Mine Car Co.

(Pittsburgh District) Penns Station, Pa.

Manufacturers of

### Chilled Annealed Mine Car Wheels

Self-Oiling Roller Bearing

### Angle Bar Trucks

The Truck for Severe Service

### Mine Cars

Steel—Composite—Wood

Awarded Gold Medal Panama-Pacific Exposition for Mine Cars, Wheels and Oiling System

Catalogue "M" upon request

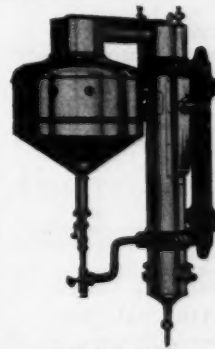
## BATTERIES THAT FAIL:

Storage Battery Efficiency Demands Pure Water

"The Better the Still the Better the Water"

Operated With Gas, Gasoline, Kerosene, Steam or Electricity

How many batteries die prematurely? The failure is often hastened by impure water. Iron, chlorine and nitrates all increase local action and the deterioration of the elements.



Gas Operated

The Improved Automatic Rochlitz Water Still automatically supplies a stream of pure distilled water

Production costs are a minimum. Send for figures and testimonials.

Standardized by several hundred mines With distilled water on hand you can purchase C. P. Acid and reduce it to proper battery strength, thus saving transportation charges on carboys and water.

Manufactured by  
**W. M. LALOR CO.**  
Manhattan Bldg. Chicago, U. S. A.



**CONCENTRATORS (Table)**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Deister Concentrator Co., The, Fort Wayne, Ind.  
Mine Equipment & Supply Co., Denver, Colo.  
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

**CONCRETE REINFORCEMENT**

American Steel & Wire Co., Chicago and New York.

**CONDENSERS**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.  
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

**CONSULTING ENGINEERS**

Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.  
Shourds-Stoner Co., Inc., Terre Haute, Ind.

**CONTRACTORS**

Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.  
Wellman-Lewis Co., Hibernian Bldg., Los Angeles, Calif.

**CONTROLLERS**

General Electric Co., Schenectady, N. Y.  
Electric Service Supplies Co., 17th and Cambria Sts., Phila., Pa.  
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

**CONVEYORS, BELT**

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Stephens-Adamson Mfg. Co., Aurora, Ill.  
U. S. Rubber Co., New York City.

**CONVEYORS, CHAIN FLIGHT**

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Wilmot Engineering Co., Hazleton, Pa.  
Stephens-Adamson Mfg. Co., Aurora, Ill.

**CONVEYORS, COAL**

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Lidgerwood Mfg. Co., 96 Liberty St., New York City.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Stephens-Adamson Mfg. Co., Aurora, Ill.

**CONVEYORS AND ELEVATORS**

Jeffrey Mfg. Co., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Stephens-Adamson Mfg. Co., Aurora, Ill.

**CONVEYOR MAGNETS**

Dings Magnetic Separator Co., 100 Smith St., Milwaukee, Wis.

**CONVEYORS, PAN OR APRON**

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Stephens-Adamson Mfg. Co., Aurora, Ill.

**CONVEYORS, PANS AND FLIGHTS**

Hendrick Manufacturing Company, Carbondale, Pa.

**CONVEYORS, SCREW**

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Stephens-Adamson Mfg. Co., Aurora, Ill.

**CORE DRILLING**

H. R. Ameling Prospecting Co., St. Louis, Mo.  
Hoffman Bros., Punxsutawney, Pa.

**COUPLINGS**

Nicholson, W. H. & Co., Wilkes-Barre, Pa.

**COUPONS**

Allison Coupon Co., Indianapolis, Ind.

**CRANES**

Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.

**CRUSHERS**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
American Pulverizer Co., 18th and Austin Sts., St. Louis, Mo.  
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Mine Equipment & Supply Co., Denver, Colo.  
Stephens-Adamson Mfg. Co., Aurora, Ill.  
United Iron Works Co., Kansas City, Mo.  
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

**CRUSHERS, COAL**

American Pulverizer Co., 18th and Austin Sts., St. Louis, Mo.  
Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.  
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Stephens-Adamson Mfg. Co., Aurora, Ill.  
United Iron Works Co., Kansas City, Mo.

**CRUSHER (Proctors)**

Dings Magnetic Separator Co., 100 Smith St., Milwaukee, Wis.

**CRUSHING PLANTS, COKE**

American Pulverizer Co., 18th and Austin Sts., St. Louis, Mo.  
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.

**CYANIDE**

American Cyanamid Co., New York, N. Y.

**DERRICKS AND DERRICK FITTINGS**

James H. Channon Mfg. Co., 227 W. Erie St., Chicago, Ill.

**DESIGNERS OF PLANTS**

Jacobsen & Schraeder, Inc., Marquette Bldg., Chicago, Ill.  
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Mine Equipment & Supply Co., Denver, Colo.  
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.  
Shourds-Stoner Co., Inc., Terre Haute, Ind.  
Wellman-Lewis Co., Hibernian Bldg., Los Angeles, Calif.

**DIAMOND CORE DRILL CONTRACTING**

Hoffman Bros., Punxsutawney, Pa.

**DOORS, AUTOMATIC MINE**

American Mine Door Co., Canton, Ohio.

**DRAG LINES**

Denver Rock Drill Mfg. Co., Denver, Colo.

**DRIFTERS, DRILL**

Denver Rock Drill Mfg. Co., Denver, Colo.

**DRILLS (Blast Hole)**

Denver Rock Drill Mfg. Co., Denver, Colo.

**DRILLS, CORE**

Hoffman Bros., Punxsutawney, Pa.

**DRILLS, ELECTRIC**

General Electric Co., Schenectady, N. Y.  
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Union Electric Co., Pittsburgh, Pa.

**DRILLS, HAMMER**

Denver Rock Drill Mfg. Co., Denver, Colo.

**DRILLS (Hand Operated Coal)**

Ohio Brass Co., Mansfield, Ohio.

**DRILLS, PNEUMATIC**

Denver Rock Drill Mfg. Co., Denver, Colo.

**DRILLS, PROSPECTING**

Hoffman Bros., Punxsutawney, Pa.

**DRILLS, ROCK**

Denver Rock Drill Mfg. Co., Denver, Colo.  
General Electric Co., Schenectady, N. Y.  
Union Electric Co., Pittsburgh, Pa.

**DRILL STEEL SHARPENERS**

Denver Rock Drill Mfg. Co., Denver, Colo.

**DRIVES, SILENT CHAIN**

Morse Chain Co., Ithaca, N. Y.

**DRUMS (Hoisting, Haulage)**

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

**DRUMS (Magnetic)**

Dings Magnetic Separator Co., 100 Smith St., Milwaukee, Wis.

**DRYERS, ORE**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

**DUMPERS, ROTARY**

Car-Dumper & Equipment Co., Chicago, Ill.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.

**DUMP CARS**

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

**DYNAMITE**

Atlas Powder Co., Wilmington, Del.  
Du Pont Powder Co., The E. I. Wilmington, Del.  
Hercules Powder Co., Wilmington, Del.  
Illinois Powder Co., St. Louis, Mo.  
National Fuse & Powder Co., Denver, Colo.

**DYNAMOS**

General Electric Co., Schenectady, N. Y.  
Graham Mfg. Co., Forty-eighth Place and Halstead St., Chicago, Ill.  
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

**ELECTRICAL APPARATUS**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
General Electric Co., Schenectady, N. Y.  
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

**ELECTRICAL ENGINEERS**

Shourds-Stoner Co., Inc., Terre Haute, Ind.

**ELECTRIC HOISTING MACHINERY**

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.

**ELECTRIC LOCOMOTIVES**

General Electric Co., Schenectady, N. Y.  
Goodman Mfg. Co., Forty-eighth Place and Halstead St., Chicago, Ill.  
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Ohio Brass Co., Mansfield, Ohio.  
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

**ELECTRIC MINE SUPPLIES**

Electric Railway Equipment Co., Cincinnati, Ohio.  
General Electric Co., Schenectady, N. Y.  
Ohio Brass Co., Mansfield, Ohio.

**ELECTRICAL SUPPLIES**

Electric Service Supplies Co., 17th and Cambria Sts., Phila., Pa.  
General Electric Co., Schenectady, N. Y.  
Union Electric Co., Pittsburgh, Pa.  
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.

**ELECTRO MAGNETIC SEPARATORS**

Dings Magnetic Separator Co., 100 Smith St., Milwaukee, Wis.

**ELEVATORS**

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Stephens-Adamson Mfg. Co., Aurora, Ill.

**ELEVATORS, BUCKET**

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Stephens-Adamson Mfg. Co., Aurora, Ill.

**ELEVATOR MACHINERY**

Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Stephens-Adamson Mfg. Co., Aurora, Ill.

**ELIMINATORS**

Nicholson, W. H. & Co., Wilkes-Barre, Pa.

**ENGINES**

Lidgerwood Mfg. Co., 96 Liberty St., New York City.  
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

**ENGINES, GAS AND GASOLINE**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Mine Equipment & Supply Co., Denver, Colo.  
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

**ENGINES (Hoisting and Hauling)**

Connellsville Mfg. & Mine Supply Co., Connellsville, Pa.

**ENGINES, OIL**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.  
Mine Equipment & Supply Co., Denver, Colo.  
Westinghouse Elec. & Mfg. Co., East Pittsburgh, Pa.  
Worthington Pump & Machinery Corp., 115 Broadway, New York City.

**ENGINES, STEAM**

Allis-Chalmers Mfg. Co., Milwaukee, Wis.

**ENGINEERS**

H. R. Ameling Prospecting Co., St. Louis, Mo.  
Hunt, Robert & Co., Insurance Exchange, Chicago, Ill.  
Indiana Laboratories Co., Hammond, Ind.  
Jacobsen & Schraeder, Inc., Marquette Bldg., Chicago, Ill.  
Jeffrey Mfg. Co., 958 N. Fourth St., Columbus, Ohio.  
Link-Belt Co., 910 S. Michigan Ave., Chicago, Ill.  
Roberts & Schaefer Co., McCormick Bldg., Chicago, Ill.  
Wellman-Lewis Co., Hibernian Bldg., Los Angeles, Calif.

**EXPANSION JOINTS**

The Crane Co., 838 S. Michigan Ave., Chicago, Ill.

**EXPLOSIVES**

Atlas Powder Co., Wilmington, Del.  
Du Pont Powder Co., Wilmington, Del.  
Hercules Powder Co., Wilmington, Del.  
Illinois Powder Co., St. Louis, Mo.  
National Fuse & Powder Co., Denver, Colo.

## FILL THE VACANCY THRU EXPERTS In Engaging Men

*Quicker*, because you waste no time sending for old applicants now unavailable or interviewing men not qualified. We will secure you men by wire.

*Business Men's  
Clearing House*  
Chamber of Commerce Bldg. Denver

## Automatic Reclosing Circuit Breaker

*The Circuit Breaker with Brains*

### KNOWS

NOT ONLY WHEN  
TO OPEN

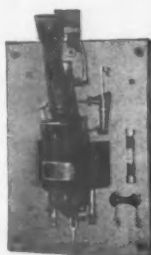
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WHEN TO  
RECLOSE

AND DOES IT

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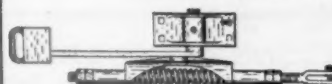
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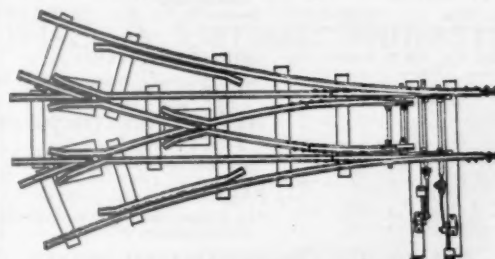
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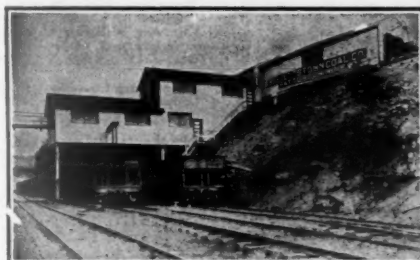
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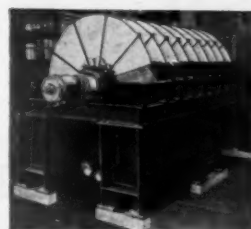
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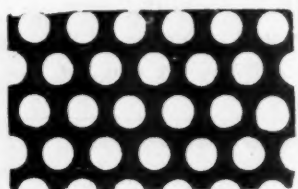
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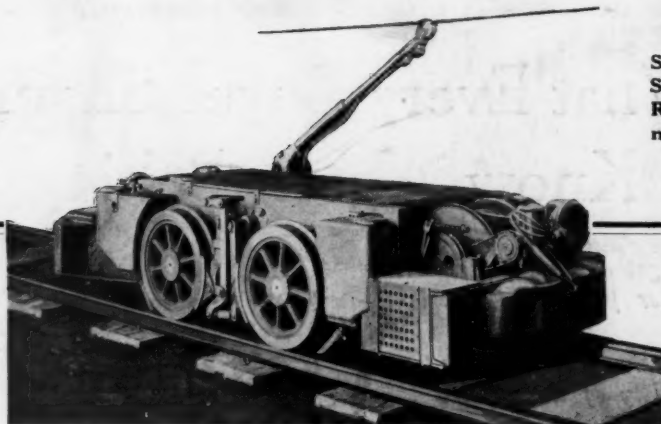
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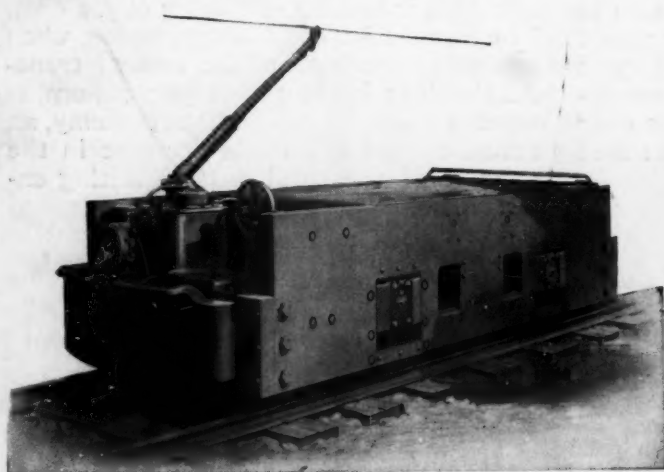
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